7535 G2
Hand-Held Computer
User Manual

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ISO 9001 Certified
Quality Management System

PSION TEKLOGIX

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The laws of the Province of Ontario and the federal laws applicable therein, excluding the conflict of laws provisions, govern this Agreement. If any provision of this Agreement is deemed invalid or unenforceable by any country, that particular provision will be deemed modified to the extent necessary to make the provision valid and enforceable, and the remaining provisions will remain in full force and effect. Failure by us to insist on strict performance or to exercise a right when entitled, does not prevent us from doing so at a later time, either in relation to that default or any subsequent one.

No modifications of this Agreement shall be effective unless in writing and approved by us.

You acknowledge that you have read this Agreement, understand it, and that it is the complete agreement between you and Psion Teklogix with respect to the subject matter hereof and supersedes all prior agreements, oral or written.

APPROVALS AND SAFETY SUMMARY

FCC DECLARATION OF CONFORMITY (DoC)

Applicant's Name & Address:	PSION TEKLOGIX 2100 Meadowvale Blvd. Mississauga, Ontario Canada L5N 7J9 Contact Person: Iain Roy Telephone No.: (905) 813-9900
US Representative's Name & Address:	1810 Airport Exchange Blvd., Suite 500 Erlanger, KY, 41018, USA Contact Person: Kyle Day Telephone No.: (859) 372-4329
Equipment Type/Environment:	Computing Devices
Trade Name / Model No.:	7535 G2 Hand-Held Micro-computer with Portable Docking Module
Year of Manufacture:	2006

Standard(s) to which Conformity is Declared:

The 7535 G2 Hand Held Micro-computer with Portable Docking Module**,** supplied by Psion Teklogix, has been tested and found to comply with **FCC PART 15, SUBPART B - UNINTENTIONAL RADIATORS, CLASS B COMPUTING DEVICES FOR HOME & OFFICE USE.**

I, the undersigned, hereby declare that the equipment as tested is representative within manufacturing tolerance to units.

Applicant	**Legal Representative in U.S.**
Signature	Signature
Mike Doyle	Kyle Day
Full Name	Full Name
Vice President, Engineering	Vice President, Channel Sales
Position	Position
Mississauga, Ontario, Canada	Erlanger, KY 41018, USA
Place	Place
June 2006	June 2006
Date	Date

CE Marking

When used in a residential, commercial or light industrial environment the product and its approved UK and European peripherals fulfil all requirements for CE marking.

R&TTE Directive 1999/5/EC

This equipment complies with the essential requirements of EU Directive 1999/5/EC (Declaration available: www.psionteklogix.com).

Cet équipement est conforme aux principales caractéristiques définies dans la Directive européenne RTTE 1999/5/CE. (Déclaration disponible sur le site: www.psionteklogix.com).

Die Geräte erfüllen die grundlegenden Anforderungen der RTTE-Richtlinie (1999/5/EG). (Den Wortlaut der Richtlinie finden Sie unter: www.psionteklogix.com).

Questa apparecchiatura è conforme ai requisiti essenziali della Direttiva Europea R&TTE 1999/5/CE. (Dichiarazione disponibile sul sito: www.psionteklogix.com).

Este equipo cumple los requisitos principales de la Directiva 1995/5/CE de la UE, “Equipos de Terminales de Radio y Telecomu-nicaciones”. (Declaración disponible en: www.psionteklogix.com).

Este equipamento cumpre os requisitos essenciais da Directiva 1999/5/CE do Parlamento Europeu e do Conselho (Directiva RTT). (Declaração disponível no endereço: www.psionteklogix.com).

Ο εξοπλισμός αυτός πληροί τις βασικές απαιτήσεις της κοινοτικής οδηγίας EU R&TTE 1999/5/ΕΚ. (Η δήλωση συμμόρφωσης διατίθεται στη διεύθυνση: www.psionteklogix.com)

Deze apparatuur voldoet aan de noodzakelijke vereisten van EU-richtlijn betreffende radioapparatuur en telecommunicatie-eindappa-ratuur 199/5/EG. (verklaring beschikbaar: www.psionteklogix.com).

Dette udstyr opfylder de Væsentlige krav i EU's direktiv 1999/5/EC om Radio- og teleterminaludstyr. (Erklæring findes på: www.psionteklogix.com).

Dette utstyret er i overensstemmelse med hovedkravene i R&TTE-direktivet (1999/5/EC) fra EU. (Erklæring finnes på: www.psionteklogix.com).

Utrustningen uppfyller kraven för EU-direktivet 1999/5/EC om ansluten teleutrustning och ömsesidigt erkännande av utrustningens överensstämmelse (R&TTE). (Förklaringen finns att läsa på: www.psionteklogix.com).

Tämä laite vastaa EU:n radio- ja telepäätelaitedirektiivin (EU R&TTE Directive 1999/5/EC) vaatimuksia. (Julkilausuma nähtävillä osoitteessa: www.psionteklogix.com).

Psion Teklogix tímto prohlašuje, že 7535 G2 je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1995/5/ES (NV č. 426/2000 Sb.) a Prohlášení o shodě je k dispozici na www.psionteklogix.com. Toto zarízení lze provozovat v České republice na základě generální licence č. GL-12/R/2000.

Psion Teklogix týmto vyhlasuje, že 7535 G2 spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1995/5/ES (NV č. 443/2001 Z.z.) a Vyhlásenie o zhode je k dispozícii na www.psionteklogix.com. Toto zariadenie je možné prevádzkovat' v Slovenskej republike na základe Všeobecného povolenia č. VPR-01/2001.

Use of the 802.11g 7535 G2 Hand-Held in France:
Owing to French Government restrictions, the 802.11g 7535 G2 Hand-Held Computer is limited to indoor use. It may be used outdoors, on private property, only with prior authorization from the French Ministry of Defense.

FCC Information To Users

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment under 47 CFR 2.1093 paragraph (d)(2), for use in a PDA. End users must follow the specific operating instructions for satisfying RF exposure compliance.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Some equipment in hospitals and aircraft are not shielded from radio frequency energy. Do not use the 7535 G2 hand-held onboard aircraft, or in hospitals, without first obtaining permission.

Do not use near pacemakers. The product may affect the operation of some medically implanted devices such as pacemakers, causing them to malfunction. Avoid placing your product next to such devices. Keep a minimum distance of 20 cm between the device and the product to reduce the risk of interference. If you have any reason to suspect that interference is taking place, turn off the 7535 G2 hand-held and contact your cardiologist for assistance.

Note: *To maintain compliance with the FCC RF exposure guidelines, if you wear the 7535 G2 on your body, use the Psion Teklogix approved carrying case.*

Use of non-approved accessories may violate FCC RF exposure guidelines.

Emissions Information For Canada

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations. When using the 802.11 radio option, to prevent radio interference, this device is intended to be operated indoors and away from windows to provide maximum shielding. Equipment (or its transmit antenna) that is installed outdoors is subject to licensing.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada. En cas d'utilisation du module radio 802.11, afin d'éviter toute interférence radio avec le service autorisé, l'appareil doit être utilisé à l'intérieur, tout en tant éloigné de toute fenêtre afin de garantir le maximum de protection. Si cet équipement (ou son antenne émettrice) est installé à l'extérieur, il est alors soumis à licence.

Warning to Users

This product is a Class I/Class II laser product according to CDRH 21 CFR 1040.10 and 1040.11 and Class1/Class 2 laser product according to IEC 60825-1:1993+A1:1997+A2:2001.

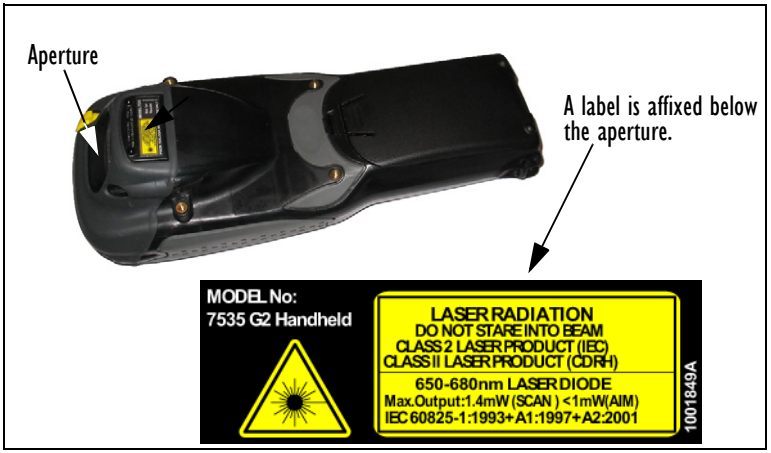
The SE1200 ALR has an maximum radiated power less than 1.4 mW; according to EN 60825-1: 2001 it is classified as a Class 3B laser product.

Laser Warnings

For your own safety, it is ***critical*** that you comply with the following warnings:

Caution

Do not look into the laser beam or point the beam at people or animals.



Caution

Using controls or adjustments, or performing procedures other than those specified herein may result in hazardous radiation exposure.

Caution

The use of optical instruments (magnification devices) with this product will increase eye hazard.

Do Not Operate In An Explosive Atmosphere

Operating Psion Teklogix equipment where explosive gas is present may result in an explosion.

Do Not Remove Covers Or Open Enclosures

To avoid injury, the equipment covers and enclosures should only be removed by qualified service personnel. Do not operate the equipment without the covers and enclosures properly installed.

Caution!

Danger of explosion if a 7535 G2 battery is incorrectly handled, charged, disposed of or replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the instructions described in “Lithium-Ion Battery Safety Precautions”, below. Carefully review all battery safety issues.

Vorsicht!

Explosiongefahr bei unsachgemäßem Austausch der Batterie Ersatz nur durch denselben oder einen vom Hersteller empfohlenen gleichwertigen Typ. Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

Lithium-Ion Battery Safety Precautions

Important: ***Before charging or using the battery pack, it is critical that the safety information in this section is reviewed and that all warnings are strictly followed.***

Warning: ***BATTERIES ARE CONSIDERED HAZARDOUS WASTE and must be returned to Psion Teklogix for proper disposal. Forward <u>all</u> used batteries to one of the following offices:***

Psion Teklogix Inc.
2100 Meadowvale Blvd.
Mississauga, Ontario
Canada L5N 7J9

Psion Teklogix Corp.
1810 Airport Exchange Blvd.
Suite 500
Erlanger, Kentucky
USA 41018

Psion Teklogix S.A.
La Duranne, 135 Rue Rene Descartes
BP 421000, 13591 Aix-En-Provence
Cedex 3; France

Warning: ***TO PREVENT the battery from leaking acid, generating heat or exploding, adhere to precautions listed below.***

- The battery incorporates built-in safety devices. To ensure their proper function, do not disassemble or alter any parts of the battery.
- Do not short-circuit the battery by directly connecting any of the exposed terminals with metal objects such as wire. Do not transport or store the battery together with metal objects such as necklaces, hair pins, etc.
- Do not dispose of batteries in fire.
- Do not use or leave the battery near a heat source such as a fire or heater.
- Do not immerse the battery in water.
- When charging, use the battery charger specifically designed for the battery.
- Do not pierce, strike, throw or step on the battery.
- Do not directly solder the battery.
- Do not connect the battery to an electrical outlet, vehicle cigarette lighter, etc.
- Do not put battery into a microwave oven or pressurized container.
- Do not use the battery in combination with primary batteries (such as dry-cell batteries) or batteries of different capacities or brands.

- Immediately remove the battery from the device or battery charger and stop use if the battery gives off an odor, generates heat, becomes discoloured or deformed, or in any way appears abnormal during use.
- Do not continue charging the battery if it does not recharge within the specified charge time.
- The battery may burst or ignite if the battery leaks. Always ensure that it is away from any exposed flames.
- If leaking electrolyte sprays into your eyes, rinse them with clean running water, and immediately seek medical attention.
- Do not store the battery in extremely high temperatures (e.g., a vehicle, strong direct sunlight, etc.). This may cause the battery to overheat or ignite, and it may also reduce the performance and service life of the battery.
- Do not use in areas where static electricity is greater than what the manufacturer guarantees.
- Keep batteries out of reach of children**.**

Always switch the unit off ***before*** changing the battery. While the battery is being replaced, the 7535 G2 will save its current data for at least 10 minutes.

Important Charger And AC/DC Adaptor Safety Instructions

- **SAVE THESE INSTRUCTIONS** – This manual contains important safety and operating instructions for battery chargers and AC/DC adaptors.
- Before using the battery charger or AC/DC adaptor, read all instructions and cautionary markings on the (1) AC/DC adaptor, (2) battery charger, (3) battery, and (4) product using the battery.
- The mains power cord shall comply with national safety regulations of the country where the equipment is to be sold.
- Use of an attachment not recommended or sold by the battery charger or AC/DC adaptor manufacturer may result in fire, electric shock, or personal injury.
- To reduce risk of damage to the electric plug and cord when unplugging the charger or AC/DC adaptor, pull the plug rather than the cord.
- Make sure the cord is positioned so that it is not stepped on, tripped over, or otherwise subjected to damage or stress.
- Do not operate the charger or AC/DC adaptor with a damaged cord or plug. Replace immediately.

- Do not operate the charger or AC/DC adaptor if it has received a sharp blow, been dropped, or otherwise damaged in any way; it should be inspected by qualified service personnel.
- Do not disassemble the charger or AC/DC adaptor; it should be repaired by qualified service personnel. Incorrect reassembly may result in electric shock or fire.
- To reduce risk of electric shock, unplug the charger or AC/DC adaptor from the outlet before attempting any maintenance or cleaning.
- An extension cord should not be used unless absolutely necessary. Use of an improper extension cord could result in fire or electric shock.
  If an extension cord must be used, make sure:
  - The plug pins on the extension cord are the same number, size, and shape as those on the charger or AC/DC adaptor.
  - The extension cord is properly wired and in good electrical condition and that the wire size is larger than 16 AWG.
- Do not expose the charger or AC/DC adaptor to rain or snow.
- Do not use the charger if, after an overnight charge, any of the batteries feel warmer than the charger housing. The charger should be inspected by qualified service personnel.
- Do not use the charger if any of the batteries or the charger get more than lukewarm. Do not use the AC/DC adaptor if it gets more than lukewarm. The equipment should be inspected by qualified personnel.

INTRODUCTION 1

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1.1 About This Manual

This manual describes how to configure, operate and maintain the Psion Teklogix 7535 G2 hand-held computer.

Chapter 1: Introduction
provides a basic overview of the 7535 G2 hand-held.

Chapter 2: Basic Checkout
describes the steps required to get the 7535 G2 ready for operation, including setting up your 802.11g radio.

Chapter 3: Getting To Know Your 7535 G2
describes the 7535 G2 features and outlines how to charge and maintain the battery. This chapter also provides a description of the keyboard, how to navigate in Microsoft® Windows® CE, how to use the internal scanner, and so on.

Chapter 4: Working With Windows CE
describes the Microsoft Windows CE desktop and how to use it. This chapter also outlines the basics of moving around a Windows CE window, selecting and opening icons, files, folders and working with a Windows dialog box.

Chapter 5: Configuration
describes the Windows CE Control Panel and how to use it to configure the 7535 G2, along with the scanners attached to the hand-held, and so on.

Chapter 6: Peripheral Devices & Accessories
describes the peripherals and accessories available for your 7535 G2 hand-held.

Chapter 7: Specifications
describes radio, hand-held computer, and battery specifications.

Appendix A: Support Services And Worldwide Offices
provides helpdesk phone numbers and provides web-based information to help you search for worldwide office addresses and phone numbers.

Appendix B: Port Pinouts
describes the 7535 G2 pinouts.

Appendix C: Connecting To Windows PCs
provides detailed instructions on USB setup.

Appendix D: Wireless Wide Area Network (WWAN)
describes WWAN configuration information.

1.2 Text Conventions

Note: *Notes highlight additional helpful information.*

Important: ***These statements provide particularly important instructions or additional information that is critical to the operation of the equipment.***

Warning: ***These statements provide critical information that may prevent physical injury, equipment damage or data loss.***

1.3 7535 G2 Features

- Rugged design:
  - fully-sealed enclosure (rated to IP65). Totally protected against dust ingression. Protected from low pressure water jets from all directions.
  - multiple 1.5 m (5 ft.) drops to polished concrete.
- Processor and memory:
  - PXA270 @ 520 MHz
  - 32 KB instruction and 32 KB data cache
  - On-board RAM: 128 MB SDRAM
  - On-board ROM: 64 MB FLASH
- Operating system:
  - Windows CE 5.0
- Programming environment:
  - HTML, XML
  - Psion Teklogix Mobile devices SDK for CE
  - Java™, Embedded Visual C++, Microsoft Visual Studio® 2005
  - Standard CE APIs - MFC, ATL
- Wireless communications:
  - IEEE 802.11g 54 Mbps 2.4 GHz Compact Flash radios
  - *Bluetooth*® SDIO radio 2.4 GHz (10 m range)
- Application software:
  - Internet Explorer for Windows CE

  - Optimized for use with Open TekTerm (for details, see the *TekTerm Software User Manual, P/N 8000073)*
  - Wordpad
  - ActiveSync
- Display:
  - 320 x 240 (1/4 VGA) graphic colour TFT
  - 8.9 cm (3.5 in.) diagonal portrait mode
  - 64K displayable colours
  - Contrast control and automatic backlight
  - Sunlight readable (for outdoor use)
  - Optional monochrome screen
  - Optional non-touchscreen
- Touchscreen:
  - Passive stylus or finger operation
  - Signature capture
  - Integral stylus holder
  - 4-wire or high durability 5-wire technology options
- Keyboards:
  - Automatic bright EL backlight
  - Ergonomically designed for left- or right-hand use
  - Dedicated function keys
- Two formats available:
  - 36-key large button numeric with a total of 20 function keys (10 direct-access)
  - 58-key alpha with a total of 30 function keys (6 direct-access)
- Indicators and controls:
  - Beeper with volume control
  - LEDs for radio transmit and receive, scanning, battery status and user applications
- Bar code applications:
  - Internal 1D & 2D scan engines: standard, long range, advanced long range, extended range
  - Fuzzy logic internal scan engine
  - Internal 1.3 megapixel CMOS image capture scan engine

  - Supports decoded and undecoded tethered scanners
- RFID applications:
  - Tethered 900 MHz RD7950 Integrated UHF RFID Reader
- Internal expansion slots:
  - One SDIO/MMC slot
  - One Type II Compact Flash slot
- External ports:

  Tether Port with:
  - RS-232 serial (decoded scanner, printer)
  - Undecoded scanner support
  - USB host

  Docking station port with:
  - RS-232 serial with diagnostics
  - USB device
  - USB host
  - Power in/out
- Power management:
  - Typical 8-hour usage Lithium-Ion standard battery
  - Quick swap packs
  - Advanced smart battery with gas gauge
  - Runs with battery, wall adaptor or cigarette lighter
  - Built-in fast charger (2 hours)
  - System backup during battery swap (more than 10 minutes)
  - One week real-time clock backup
- Network Management:
  - SNMP MIB 2 support
  - Remote software download
  - Remote WLAN management

1.4 About The 7535 G2 Hand-Held Computer

The 7535 G2 is a ruggedized hand-held personal computer, running the Microsoft Windows CE 5.0 operating system. It is intended for use in commercial and light industrial applications with a focus on real time wireless data transactions. All possible bar code input methodologies are supported by one of a variety of scanners available. Optimization for specific operational environments is supported with a wide range of peripheral options and carrying accessories.

1.4.1 The 7535 G2 Hand-Held Computer

Figure 1.1 7535 G2 With 58-Key Keyboard

Figure 1.2 7535 G2 Docking Port

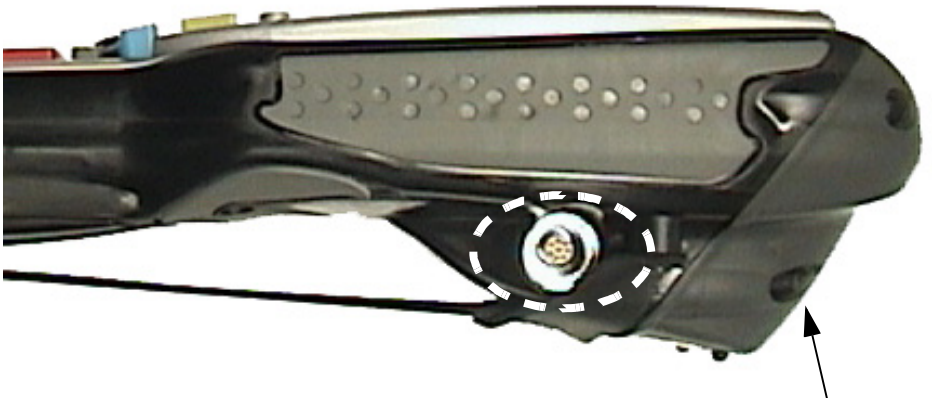

Figure 1.3 Tether Port

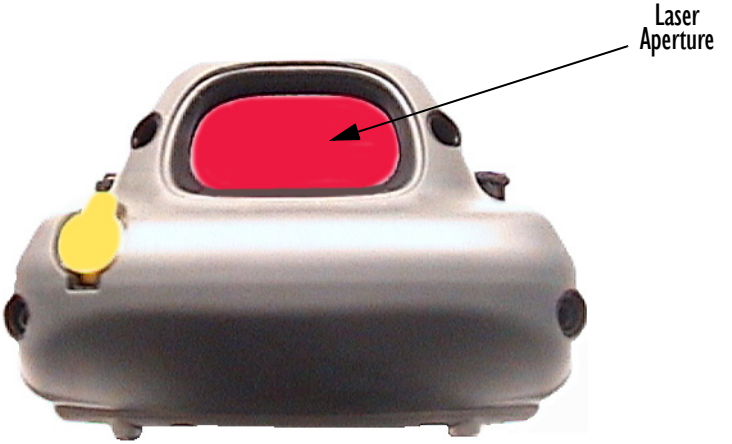

Figure 1.4 Scanner Window

1.4.2 Regulatory Labels

This label is affixed below the scanner window.

Figure 1.5 Laser Warning Label

Warning: ***Using controls or adjustments or performing procedures other than those specified herein may result in hazardous radiation exposure.***

This label is affixed below the scanner window.

Figure 1.6 LED Radiation Notice Label

BASIC CHECKOUT 2

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2.1 Preparing The 7535 G2 For Operation

Typically, 7535 G2 hand-helds are configured at the factory and arrive ready for use. Although these hand-helds are equipped with an internal Compact Flash and SD I/O slot, these slots are not intended for user modification. If a device needs to be changed or added in these slots, contact qualified Psion Teklogix personnel. Refer to Appendix A: "Support Services And Worldwide Offices" for the service number closest to you.

2.1.1 Equipment You Need To Get Started

You'll need:

- A compatible battery charger, docking station or portable docking module (PDM) with power supply.
- An operating wireless network (if you are not operating the equipment in batch mode).
- A medium (#2) Phillips head screwdriver (if you need to attach a carrying strap or pistol grip handle).

2.2 Powering Up The 7535 G2

Note: *Psion Teklogix offers a Portable Docking Module (PDM) along with its power supply to help speed the checkout and confirmation process for your 7535 G2. The PDM can power your hand-held with or without a battery installed in the unit. Refer to Chapter 6: Peripheral Devices & Accessories beginning on page 237 for more information about this accessory.*

2.2.1 Charging The Battery

Important: ***The 7535 G2 uses a high capacity Lithium-Ion battery. It is critical that you review the battery safety guidelines in*** "Lithium-Ion Battery Safety Precautions" on page xxiv ***before charging the battery.***

Batteries shipped from the factory are not charged. They must be fully charged prior to use. Full capacity may not be reached until at least 5 full charge/discharge cycles have been performed. Batteries can be charged using a gang charger or the unit's internal charger. When using the internal charger, a suitable power source is required. All chargers and docking stations are described in Chapter 6: "Peripheral Devices & Accessories" beginning on page 237.

Important: ***The 7535 G2 battery properties dialog box (see*** "Battery Capacity" on page 124***) may indicate an incorrect battery capacity until the new battery has been fully charged. It may take several charge/discharge cycles for the battery capacity gauge to register capacity with the full 95% accuracy.***

2.2.2 Installing The Battery And Switching The Hand-Held On

Important: ***Always switch the unit off*** **before** ***changing the battery. While the battery is being replaced, the 7535 G2 will save its current data for up to 20 minutes.***

If you are not using a docking station or PDM:

- Slide the charged battery with the contoured plastic facing you into the unit. Click the battery into place.

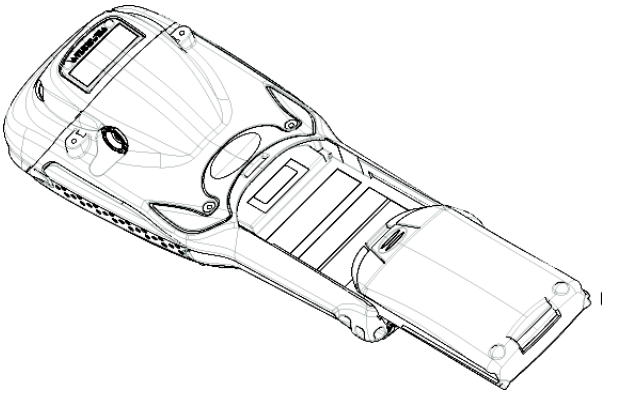

Figure 2.1 Installing The Battery

Note: *If you are using a docking station, you can insert an uncharged battery, dock the unit and switch it on.*

If you are using a PDM, you can configure your unit without a battery, with a charged battery or with an uncharged battery.

If you are using a hand strap:

- Hook the bottom of the hand strap into the slot at the base of the battery.

To switch the unit on:

- Press and hold down the [ENTER/ON] key for at least one second.
- When all four LEDs flash yellow, release the [ENTER/ON] button.

A splash screen displaying the Psion Teklogix logo and the Windows CE logo appears. When Windows CE has successfully loaded, the startup desktop is displayed.

Note: *The screen may go blank for a few seconds after the splash screen loading bar reaches the end. This is part of the normal Windows CE cold boot process. The desktop is displayed after a few moments.*

2.3 Attaching Carrying Accessories

Psion Teklogix recommends that a carrying accessory—a hand strap, pistol grip or shoulder strap—be installed on the 7535 G2 before use. If your hand-held is not fitted with a hand strap or pistol grip, you can install either using the carrying accessory kit supplied. You'll need:

- A Phillips head screwdriver.

Important: ***Do not use adhesives such as Loctite to secure screws on carrying accessories. These chemicals may damage the plastic casing.***

2.3.1 Attaching The Hand Strap

Two Phillips head screws are provided with the hand strap.

- Attach the strap to the two threaded inserts located at the back of the 7535 G2 near the top of the unit (see Figure 2.2 on page 16).

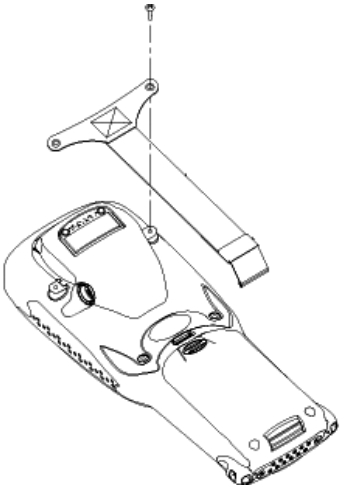

Figure 2.2 Attaching The Hand Strap

- Stretch the handstrap toward the base of the 7535 G2, and hook the bottom of the handstrap into the slot near the base of the battery pack.

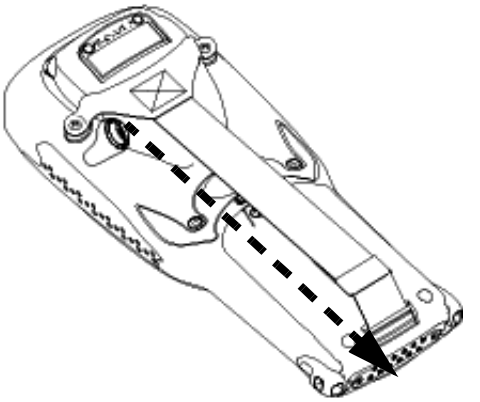

Figure 2.3 Hooking The Hand Strap In Place

2.3.2 Attaching The Pistol Grip

Note: *A Phillips head screwdriver is required.*

The pistol grip is attached to the back of the 7535 G2 using the four threaded inserts in the upper part of the 7535 G2 casing. Four black #4-40 Phillips head screws are provided with this accessory.

Note: *Prior to installation, make sure the trigger mechanism is securely snapped into the pistol grip body and that the trigger operates properly.*

- Position the pistol grip so that it fits snugly over the back of the unit and the inserts on the back of the hand-held are aligned with the holes in the pistol grip.

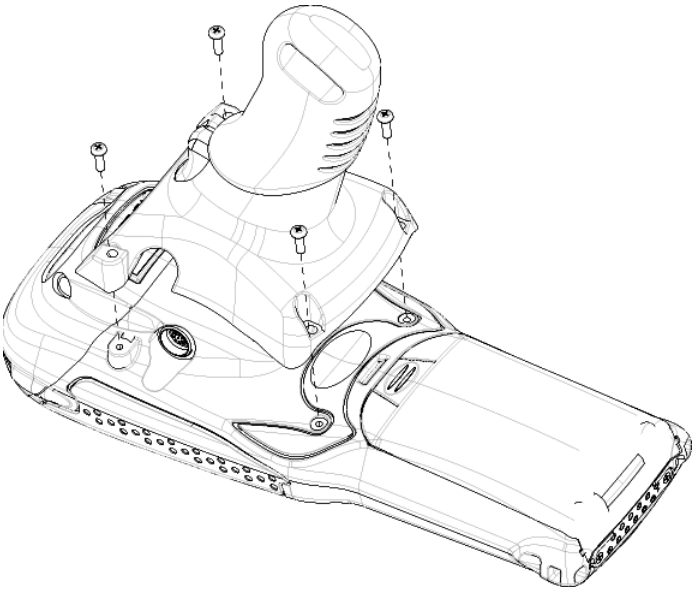

Figure 2.4 Attaching The Pistol Grip

- Using a Phillips screwdriver, securely fasten the pistol grip to the back of the 7535 G2.

2.4 Calibrating The Touchscreen

Note: *Keep in mind that 7535 G2 hand-helds can be ordered with or without touchscreens, and that the touchscreen function can be turned off (see "Touch" on page 130).*

If you have the 7535 G2 touchscreen feature, it is factory-calibrated and ready-to-go; however, over time the touchscreen's operating parameters may change, and it may need to be recalibrated for correct operation. Refer to "Calibrating The Touchscreen" on page 60 for details.

2.5 Configuring Your Radio

Psion Teklogix provides two types of 802.11g Compact Flash (CF) wireless LAN radio cards for the 7535 G2: the RA2040 and the RA2041. Both models are Direct Sequence Spread Spectrum radios.

If your 7535 G2 is equipped with an *RA2041 CF radio*, follow the steps under "Summit Client Utility (SCU) For Model RA2041" on page 28 to set up this type of radio for communication with a wireless LAN.

If your hand-held is equipped with an *RA2040 CF radio*, follow the steps outlined under the heading "Configuring An IEEE 802.11 Radio In The Unit", below.

2.6 Configuring An IEEE 802.11 Radio In The Unit

The most common 802.11g settings are configured as defaults. However, there are some fields that must be completed, including the SSID of your access point and the security methods implemented in the network (including access keys).

Note: *In most situations the configuration of your 802.11 radio will require parameters, settings, and access keys from a network administrator.*

Network administrators should review the detailed security information in this section in order to effectively configure the 802.11 wireless network.

Important: ***If the 7535 G2 is equipped with a radio that has never been configured, the radio settings dialog box opens automatically when the unit is powered on. In this case, skip to Step 4 on page 20.***

To configure the 802.11g radio:

1. Tap on **Start>Settings>Network and Dial-up Connections.** (If the *Start Menu* isn't displayed in the taskbar, press [BLUE] [0] to display it**.)**

   If you're using the keyboard, press [BLUE] [0] to display the *Start Menu*. Use the [DOWN] arrow key to highlight *Settings*. Press the [RIGHT] arrow key to display the sub-menu. Highlight *Network,* and press [ENTER].

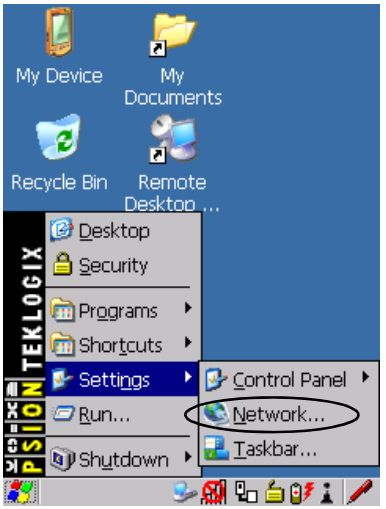

Figure 2.5 Network And Dial-Up Connections

2. Choose the radio icon to open the *802.11g Wireless LAN Settings* window. In the sample screen, this icon is labelled ***PTXCF8385P N1***.

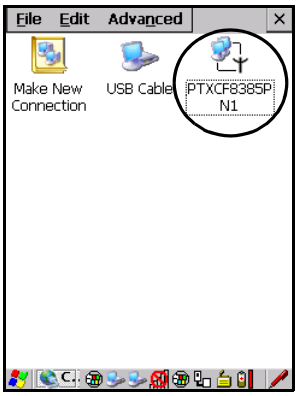

Figure 2.6 802.11g Wireless LAN Settings Window

3. Wireless Statistics Tab
   When you choose the **Wireless LAN** icon, an *802.11g Wireless LAN Settings* window (*PTXCF8385P N1* in the sample below) is displayed.

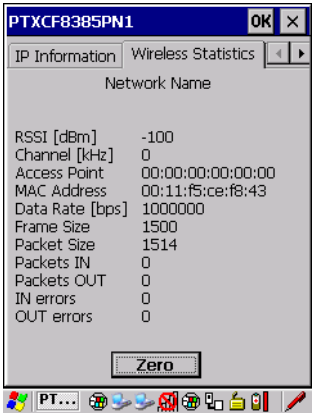

Figure 2.7 Wireless Statistics

This tab lists your radio statistics. Choosing the **Zero** button resets the statistics of the last four items: Packets IN, Packets OUT, IN errors and OUT errors.

- Display the next tab in this window, *Wireless Information*.

4. Wireless Information Tab

   The options under this tab display existing networks to which you can connect, and it allows you to add a new network or modify the settings for an existing network.

   - **Configure button** – To change the settings in an existing network, highlight the network you want to modify, and choose the **Configure** button to display the *Wireless Properties* dialog box.
   - **Connect button** – To force connection to a specific, existing network, highlight the network to which you want your 7535 G2 to connect, and choose the **Connect** button.

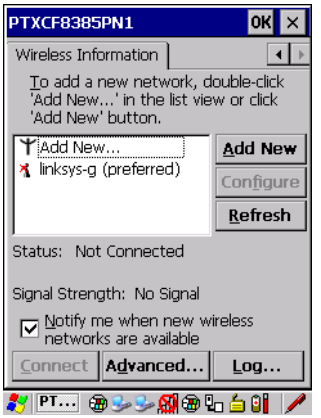

Figure 2.8 Wireless Information Tab

This tab lists available networks—any access points that are broadcasting an SSID, and it lists preferred networks—networks that you have configured. Since access points are generally secure, they will most likely not be listed here. By default, 7535 G2 attempts to connect to preferred networks. This behaviour can be changed by enabling *Automatically connect to non-preferred networks* in the *Advanced* dialog box (page 26).

- To add a new configuration, tap on the **Add New** button. A blank *Wireless Properties* dialog box is displayed.

5. Wireless Properties

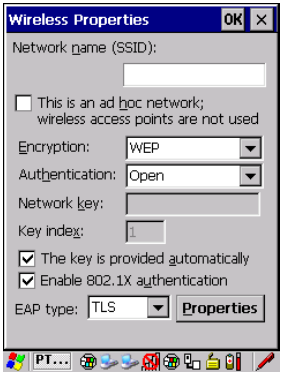

Figure 2.9 Wireless Properties Dialog Box

Network name (SSID)

- Type the appropriate SSID (Service Set Identifier) in the *Network name (SSID)* text box at the top of this dialog box.

The *Network name* field can contain a maximum of 32 characters. The name assigned here is listed as a preferred network.

Important: ***Keep in mind that the 7535 G2 will only communicate with access points that are configured with the same SSID.***

Ad Hoc And Infrastructure

If you are using an *Infrastructure* network—one in which 7535 G2s must pass data through an access point—leave the checkbox next to *This is an ad hoc network* blank.

If you are using an *Ad Hoc* network—a network in which 7535 G2s pass data directly to other 7535 G2s without an access point—highlight *This is an ad hoc network*, and add a checkmark in the checkbox to enable *Ad Hoc*.

Encryption

WEP (Wired-Equivalent Privacy) encryption prevents others from accidentally accessing your network. If you are not using encryption, you can choose *Disabled* from the drop-down encryption menu. Otherwise, leave this field as is.

Note: *WEP cannot be disabled if you are using WPA or WPA-PSK authentication.*

TKIP (Temporal Key Integrity Protocol) is an encryption protocol included as part of the IEEE 802.11 standard for wireless LANs. Designed to enhance WEP, TKIP uses the original WEP encryption but 'wraps' additional code at the beginning and end to encapsulate and modify it, encrypting each data packet with a unique encryption key.

Authentication

802.11 supports four subtypes of network authentication services: *Open, Shared, WPA, and WPA-PSK*. Under *Open* authentication, any wireless station can request authentication. The station that needs to authenticate with another wireless station sends an authentication management frame that contains the identity of the sending station. The receiving station then sends back a frame that indicates whether it recognizes the identity of the sending station.

Under *Shared* authentication, each wireless station is assumed to have received a secret shared key over a secure channel that is independent from the 802.11 wireless network communications channel.

Under *WPA and WPA-PSK* authentication, the use of 802.1x authentication is required. For wireless networks *without* a Remote Authentication Dial-In User Service (RADIUS) infrastructure, WPA supports the use of a pre-shared key. For wireless networks *with* a RADIUS infrastructure, Extensible Authentication Protocol (EAP) and RADIUS is supported.

Network Key:

This text box is used to specify a 5 or 13 ASCII character sequence or an equivalent 10 or 26 Hexadecimal digit sequence that matches the active WEP key on the access point.

- To assign a Network key, highlight **The key is provided automatically**, and uncheck the checkbox to disable this option.

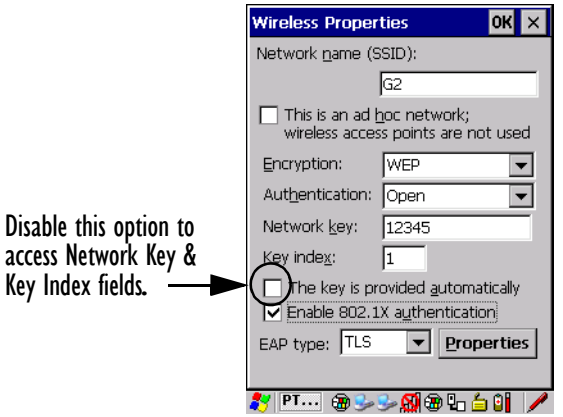

Figure 2.10 Accessing Network Key And Key Index

Key Index:
This field is used to identify the WEP key.

- Enter a value from **1** to **4**.

Enable 802.1x authentication
802.1X is the IEEE standard that offers additional security for local area networks. It provides authentication for user devices attached to an Ethernet network, whether wired or wireless. A security protocol packet such as TLS

or MD5 encapsulated in an *EAP* is used in conjunction with the 802.1X standard to authenticate users at the MAC layer. Available EAPs are listed in the drop-down menu next to the *EAP* option.

- To activate *802.1X*, highlight **802.1x authentication**, and check the checkbox.

EAP Type (Extensible Authentication Protocol):
This drop-down menu lists the EAP types available on your system. The items in this drop-down menu will vary depending on your network setup. Keep in mind also that some authentication protocols require that you select a *Certificate*. By selecting the *Properties* button, you will be able to select a Certificate. "Certificate Assignment" on page 135 provides a website that outlines how to create certificates for your network.

- Saving and exiting the radio setup.
  Once you have completed the configuration, press [ENTER] or tap on **OK**.

The connection you created will be listed in the *Wireless Information* tab as a preferred network. The radio will search for the SSID and will compare the WEP and authentication information you specified. If there is a match between your hand-held settings and the access point settings, the hand-held will communicate on the network through the access point.

2.6.1 Assigning An IP Address

If your network is not using a DHCP server, you will need to assign an IP address.

- In the *PTXCF8385P N1 Settings* window, tap on the **IP Information** tab.

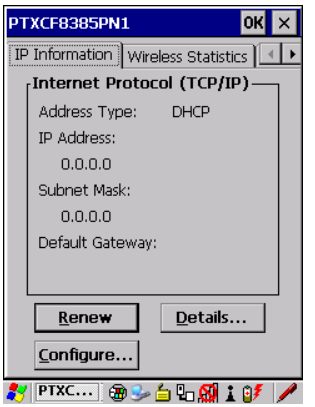

Figure 2.11 IP Information

Note: *Choosing the Renew button forces the 7535 G2 to renew or find a new IP address. This is useful if, for example, you are out of communication range for a longer period of time and your 7535 G2 is dropped from the network.*

To define a static IP address:

- Tap on the **Configure** button.

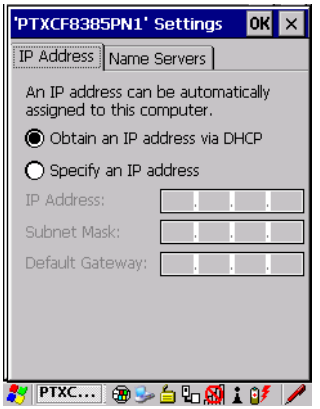

Figure 2.12 Defining An IP Address

- Tap the stylus on the radio button next to **Specify an IP address** to select it.
- Type an *IP, Subnet Mask* and *Default Gateway* address in the appropriate fields. Press [ENTER] to save your information.

2.6.2 Name Servers Tab

Note: *If DHCP is enabled, name server addresses are assigned automatically.*

- In the *PTXCF8385P N1 Settings* window, display the **IP Information** tab.
- In the *IP Information* tab, tap on the **Configure** button.

- Display the **Name Servers** tab.

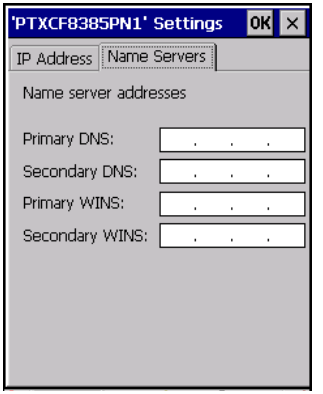

Figure 2.13 Name Servers Tab

The DNS and WINS fields in the *Name Servers* tab allow you to specify additional WINS and DNS resolvers. The format for these fields is ###.###.###.###.

2.6.3 Advanced Features

To display the *Advanced Wireless Settings* dialog box:

- Tap the **Advanced** button in the *Wireless Information* tab.

This window lists the available preferred networks.

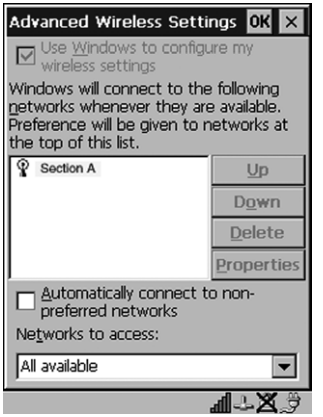
Advanced Wireless Settings
OK
Use Windows to configure my wireless settings
Windows will connect to the following networks whenever they are available. Preference will be given to networks at the top of this list.
Section A
Up
Down
Delete
Properties
Automatically connect to non-preferred networks
Networks to access:
All available

Figure 2.14 Advanced Settings

2.6.3.1 Rearranging Preferred Networks

The 7535 G2 attempts to connect with the networks listed in this dialog box in sequence, beginning at the top of the list. If you need to rearrange this list of networks, move networks up and down in the list:

- Move the cursor into the *networks list*, and

  In the networks list, highlight the **network** that you want to move up or down in the list.
- To move the highlighted item in the list upward or downward, tap on the **Up** or **Down** button.

2.6.3.2 Deleting A Preferred Network

To delete a network from this list:

- In the *networks* list, highlight the **network** that you want to remove.
- Tap on the **Delete** button.

2.6.3.3 Changing Network Properties

To change the properties of an existing preferred network:

- Highlight the **network** that you want to modify.
- Tap on the **Properties** button.
- Make any necessary changes in the *Wireless Properties* dialog box, and press [ENTER] to save the changes.

2.7 Summit Client Utility (SCU) For Model RA2041

This section describes the *Summit Client Utility (SCU)*. The *SCU* provides the utilities you will need to configure the Summit 802.11g Compact Flash radio module, model number RA2041 so that it can communicate through a wireless LAN effectively and securely.

2.7.1 Assigning The IP Address

Before launching the *SCU*, you need to configure how the IP address will be obtained. If your network is not using a DHCP server, you will need to assign an IP address.

1. Tap on **Start>Settings>Network and Dial-up Connections.** (If the *Start Menu* isn't displayed in the taskbar, press [BLUE] [0] to display it**.)**

   If you're using the keyboard, press [BLUE] [0] to display the *Start Menu*. Use the [DOWN] arrow key to highlight *Settings*. Press the [RIGHT] arrow key to display the sub-menu. Highlight *Network,* and press [ENTER].

2. Choose the **Summit WLAN Adapter** icon to open the *802.11g Wireless LAN Settings* window. In Figure 2.15, this icon is labelled ***SDCCF10G1***.

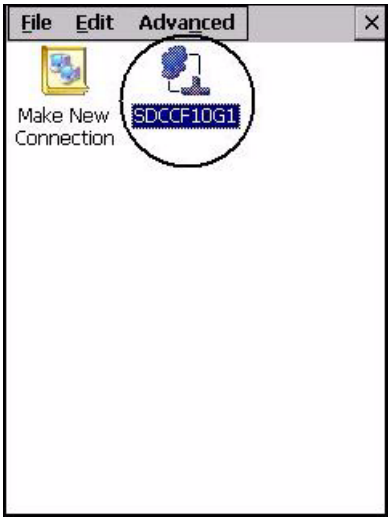

Figure 2.15 Summit WLAN Adapter Icon

The *Summit WLAN Adapter Settings* menu is displayed (In this screen shown as the *SDCCF10G1* menu).

3. Tap on the **IP Information** tab.

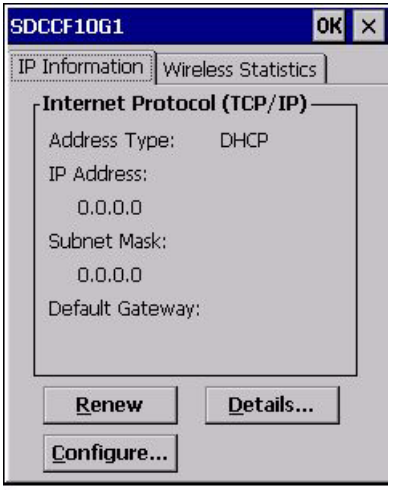

Figure 2.16 IP Information Tab

Note: *Choosing the Renew button forces the 7535 G2 to renew or find a new IP address. This is useful if, for example, you are out of communication range for a longer period of time and your 7535 G2 is dropped from the network.*

4. To define a static IP address, tap on the **Configure** button. The *Summit WLAN Adapter Settings* menu provides two options:

   - Tap on **Obtain an IP address via DHCP** to have an address assigned automatically, or
   - If you want to use a particular IP address, tap on **Specify an IP address**, and type the preferred address as well as the *IP, Subnet Mask* and *Default Gateway* addresses in the appropriate fields. Tap **OK** to save your information.

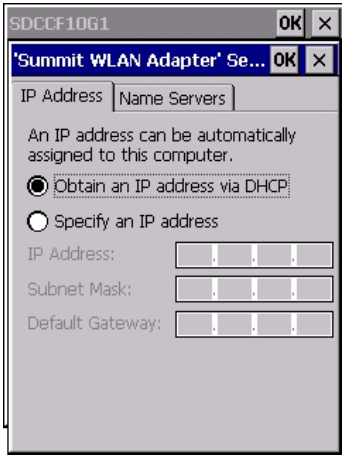

Figure 2.17 Defining An IP Address

2.7.2 Name Servers Tab

Note: *If DHCP is enabled, name server addresses are assigned automatically.*

- In the *SDCCF10G1* window, display the **IP Information** tab.
- In the *Summit WLAN Adapter Settings>IP Information* tab, tap on the **Configure** button.
- Display the **Name Servers** tab.

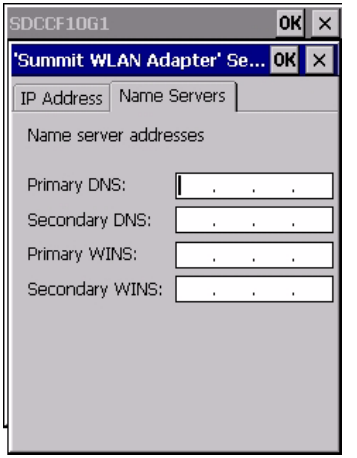

Figure 2.18 Name Servers Tab

The DNS and WINS fields in the *Name Servers* tab allow you to specify additional WINS and DNS resolvers. The format for these fields is ###.###.###.###.

SCU

2.7.3 Using The SCU To Connect To The WLAN

This section provides a quick set of steps to create a profile (referred to as a "config"). Detailed information about each of the SCU tabs—*Main*, *Config*, *Status*, *Diags* and *Global Settings*—is provided under "SCU Tabs" on page 34.

To launch the *SCU* so that your 7535 G2 can connect to a wireless LAN:

1. Tap on **Start>Programs**, and then tap on the **SCU** icon.

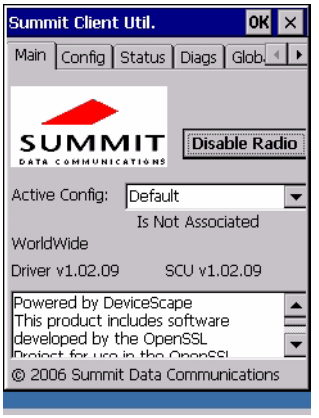

Figure 2.19 SCU Main Tab

2. Tap on the **Config** tab.

Figure 2.20 SCU Config Tab

- Tap on the **New** button to define a new *config*.
- Type a name for your configuration using any alpha-numeric combination to uniquely identify this *config*.
- Tap on **OK** to return to the *Config* tab.
- Tap on **Commit** to save the *config* name.
- When a pop-up message indicates that your configuration will be saved, tap on **OK**.

2.7.3.1 SSID

To configure the *SSID* for the network to which you want to associate:

- Type an **SSID** in the text box to the right of *SSID*. This field is limited to 32 characters.
- Tap on **Commit** and then, in the pop-up message, tap on **OK** to save your SSID setting.

Important: ***To learn more about the other options available in the radio attributes list, refer to*** "Config Tab" on page 35**.**

2.7.3.2 EAP Type

- Tap on the **EAP type** drop-down menu, and choose the appropriate type of authentication—*LEAP*, *EAP-FAST*, *PEAP-MSCHAP*, and *PEAP-GTC*.
- Next, tap on the **Credentials** button, and type credentials for IEEE 802.1X EAP types.

Important: ***Refer to*** "SCU Security Capabilities" on page 37 ***for details about security settings. Additional EAP details are described in*** "EAP Credentials" on page 39**.**

2.7.3.3 Encryption

- Tap on the **Encryption** drop-down menu, and choose the appropriate type of encryption—*Manual WEP*, *Auto WEP*, *WPA PSK*, *WPA TKIP*, *WAP2PSK*, *WAP2 AES*, and *CCKM TKIP*.

If you choose *Manual WEP*, *WPA PSK* or *WPA PSK*:

- Tap on the **WEP/PSK** Keys button. For *Manual WEP*, choose up to four static WEP keys. For *PSK*, type an ASCII passphrase or hex PSK.

- Configure any other settings that are supplied by the network administrator for the *SSID* to which you will associate.
- Make certain that you tap on **Commit** *following each change*.

Once you've completed the configuration:

- Tap the **Main** tab. Tap on the **Active Config** button – your new *config* will be listed in the drop-down menu.

When you tap on the *config* you created, the RA2041 radio module attempts to connect to the network using the following steps:

- Associate to the SSID.
- Authenticate to the network.
- If EAP authentication is being used, derive dynamic encryption keys.
- If DHCP is being used by the network, obtain an IP address.

If the RA2041 is not connecting properly:

- Tap on the **Status** tab.

The *Status* dialog box lists the IP and MAC addresses, and indicates the current state of the radio, the signal strength, channel and so on.

You can also use the *Status* screen for DHCP renewal and ICMP Echo Requests (Pings).

Important: ***For details about the Status dialog box, refer to*** "Status Tab" on page 42**.**

2.8 SCU Tabs

This section provides a detailed description of each of the tabs available in the SCU—*Main* (below), *Config (*page 35*)*, *Global Settings (*page 40*), Status (*page 42*)*, and *Diags (*page 43*)*.

2.8.1 Main Tab

The *Main* tab is displayed when you tap on the *Start>Programs>**SCU*** icon.

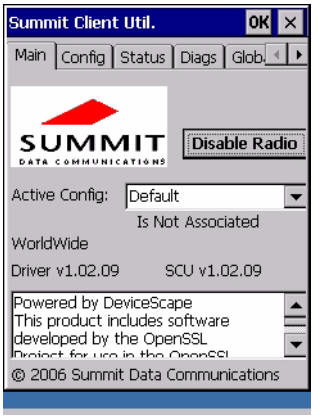

Figure 2.21 SCU Main Tab

- **Enable/Disable Radio:** Enables or disables the radio. This a toggle button; when the radio is enabled, this button reads *Disable Radio*, and when the radio is disabled, the button reads *Enable Radio*.
- **Active Config:** Lists the name(s) of the active configuration profile(s) which are referred to as “configs”. When a *config* is chosen from the *Active Config* drop-down menu, the settings for that config become active.
  If *ThirdPartyConfig* is selected, after the 7535 G2 goes through a power cycle, WZC is used for configuration of the radio. See “ThirdPartyConfig” on page 39 for details.
- **Association Status:** Indicates if the radio is associated to an access point. If this is not the case, *Association Status* indicates the radio status.
- **Software Version:** This field displays the version of the device driver and the *SCU* that are running on the 7535 G2.
- **About Box:** This box provides information about the *SCU*.

2.8.2 Config Tab

The *Config* tab allows you to define radio and security settings that are stored in the registry as part of the configuration profile or *config*.

The *config* you create and save is listed in the *Active Config* drop-down menu in the *Main* tab You can define up to 20 *configs*.

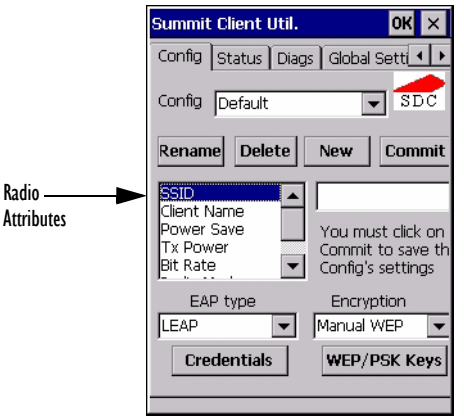

Figure 2.22 SCU Config Tab

- **Config:** Used to choose the *config* to be viewed or edited. If *ThirdParty-Config* is chosen, after the 7535 G2 goes through a power cycle, WZC is used for configuration of the radio.
- **Rename:** Allows you to assign a *config* name.
- **Delete:** Deletes the *config* unless it is currently active.
- **New:** Allows you to create a new *config* with default settings and assign it a name.
- **Commit:** Saves all changes.
- **Radio Attributes:** Lists radio attributes. These attributes can be individually chosen from this menu. When an attribute is chosen, an associated list of options is displayed where you can assign new settings or view existing settings.

The following table describes the options in the *Radio Attributes* drop-down menu:

Radio Attribute	Description	Value	Default
Config	Name of config (configuration profile). Use Rename button to change name.	Maximum of 32 characters.	None
SSID	Service set identifier (SSID) for WLAN to which the radio connects.	Maximum of 32 characters.	None
Client Name	Name assigned to radio & 7535 G2 into which it is installed.	Maximum of 16 characters.	None
Power Save	Power save mode for radio.	CAM: Constantly awake. Maximum: Maximum power savings. Fast: Fast power save mode.	Fast
Tx Power	Maximum transmit power.	Max: Maximum defined for current regulatory domain. Measured in mW: 50,30,10, 1.	Max
Bit Rate	Used by radio when interacting with WLAN access point.	Auto: Rate automatically negotiated with access point. Rates in Mbps: 1, 2, 5.5, 6.9 11, 12, 18, 24, 36, 48, 54.	Auto
Radio Mode	Used by 802.11g when interacting with access point.	B rates only: 1, 2, 5.5, & 11 Mbps. G rates only: 6, 9, 12, 18, 24, 36, 48, and 54 Mbps. BG rates full: All B and G rates. BG rates optimized: 1, 2, 5.5, 6, 11, 24, 36 & 54 Mbps.	BG rates optimized
Auth Type	802.11 authentication type used when associating with access point.	Open, shared-key, or LEAP (Network-EAP).	Open
EAP Type	Extensible Authentication Protocol type used for 802.1X authentication to access point.	None, LEAP, EAP-FAST, PEAP-MSCHAP – To use EAP-TLS, you must use WZC.	None

Radio Attribute	Description	Value	Default
Credentials	Authentication credentials for the selected EAP type. *Refer to* "EAP Credentials" on page 39.	User: Username or Domain/Username (up to 64 characters). Password: up to 64 characters. For PEAP: CA Cert–CA server certificate filename.	None
Encryption	Type of encryption used to protect transmitted data.	None, Manual WEP, Auto WEP (generated during EAP authentication), WPA PSK, WPA TKIP, WPA2 PSK, WPA2 TKIP, WPA2 AES, CCKM TKIP. For Manual WEP: Up to four static WEP keys. For PSK: ASCII passphrase or hex PSK.	None

- **EAP-Type & Encryption:** Security settings. These settings allow you to enhance the security of data across the wireless LAN. Refer to "EAP Credentials" on page 39 and "SCU Security Capabilities" below, for details about these settings.

2.8.2.1 SCU Security Capabilities

The *SCU* provides integrated security to protect transmitted data as well as the hand-held and wireless WAN infrastructure that transmit and receive data.

A foundational element of the IEEE 802.11i WLAN security standard is IEEE 802.1X and a critical application on a mobile device is an 802.1X supplicant. This supplicant provides an interface between the radio and the operating system and supports the authentication and encryption elements required for 802.11i, also known as Wi-Fi Protected Access 2 (WPA2), as well as predecessors such as WPA and WEP. Summit software includes an integrated supplicant that supports a broad range of security capabilities, including:

- 802.1X authentication using pre-shared keys or an EAP type, required for WPA2 and WPA.
- Data encryption and decryption using WPA2 AES, WPA TKIP or WEP.

Common EAP types include:

- **EAP-TLS:** Uses the same technology as a follow-on to Secure Socket Layer (SSL). It provides strong security, but relies on client certificates for user authentication.
- **PEAP:** Provides secure user authentication by using a TLS tunnel to encrypt EAP traffic. Two different inner methods are used with PEAP:
  - EAP-MSCHAPV2, resulting in PEAP-MSCHAP: This is appropriate for use against Windows Active Directory and domains.
  - EAP-GTC, resulting in PEAP-GTC: This is for authentication with one-time passwords (OTPs) against OTP databases such as SecureID.
- **LEAP:** Is an authentication method for use with Cisco WLAN access points. LEAP does not require the use of server or client certificates. LEAP supports Windows Active Directory and domains but requires the use of strong passwords to avoid vulnerability to offline dictionary attacks.
- **EAP-FAST:** Is a successor to LEAP and does not require strong passwords to protect against offline dictionary attacks. Like LEAP, EAP-FAST does not require the use of server or client certificates and supports Windows Active Directory and domains.

Note: *PEAP and EAP-TLS require the use of Windows facilities for the configuration of digital certificates.*

SCU EAP Types

The following EAP types are supported by the integrated supplicant and can be configured in SCU: PEAP-MSCHAP, PEAP-GTC, LEAP and EAP-FAST. With each of these four types, if authentication credentials are not stored in the *config*, you will be prompted to enter credentials the first time the radio attempts to associate to an access point that supports 802.1X (EAP).

Consider the following when configuring one of the EAP types:

- PEAP-GTC: SCU supports static (login) passwords only.
- LEAP: Strong passwords are recommended.
- EAP-FAST: SCU supports automatic, not manual, PAC provisioning.

EAP-TLS will work with a RA2041 radio module when *Windows Zero Config* (WZC) rather than the *SCU* is used to configure the type. With WZC, *the native Windows supplicant* instead of the *SCU* integrated supplicant is used.

2.8.2.2 EAP Credentials

Keep the following in mind when defining security settings:

- If the credentials specified in the *config* are incorrect and that *config* is used, the authentication fails without an error message; you will not be prompted to enter correct credentials.
- If the credentials are not specified in the *config*, when the radio tries to associate using that config, you will be prompted to enter the credentials.
- When prompted, you can enter valid credentials, enter invalid credentials, or cancel the operation.
  - If you enter valid credentials and tap **OK**, the radio will associate and authenticate.
  - If you enter invalid credentials and tap on **OK**, the radio will associate but will not authenticate; you will be prompted again to enter credentials.
  - If you tap on **Cancel** or clear the credentials fields and tap on **OK**, the radio will not attempt to associate with that *config* until you perform one of the following actions (while the *config* is the *active config*):
    - Cause the 7535 G2 to go through a power cycle or suspend/resume.
    - Disable and enable the radio, or tap the **Reconnect** button on the *Diags* windows.
    - Modify the *config,* and tap on **Commit**.

Alternatively, you can choose another *config* as the active *config* and then switch back to the *config* for which EAP authentication was cancelled.

2.8.2.3 ThirdPartyConfig

If you choose to configure *ThirdPartyConfig*, the *SCU* will work with the operating system's *Windows Zero Config* (WZC) to configure radio and security settings for the CF radio installed in the unit.

Choosing this *config* means that *WZC* must be used to define the following radio and security options: SSID, Auth Type, EAP Type and Encryption.The *SCU* settings for *ThirdPartyConfig* include: Client Name, Power Save, Tx Power, Bit Rate and Radio Mode. These *SCU* settings along with SCU global settings and the WZC settings will be applied to the radio module.

2.8.3 Global Settings Tab

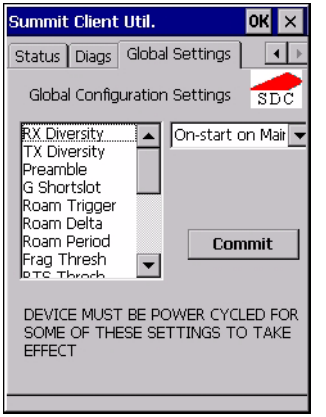

Figure 2.23 SCU Global Settings Tab

The *Global Settings* tab allows you to define radio and security settings that apply to all *configs* (profiles), along with settings that apply specifically to the *SCU*.

The *Global Settings* in the table below can be edited in the SCU:

Global Setting	Description	Value	Default
CCX features	Activates three CCX features: AP-assisted roaming, AP-specified maximum transmit power & radio management.	On, Off	Off
Certs Path	Directory where certificates for EAP authentication are stored.	Valid directory path up to 64 characters.	Dependent on device.
Frag Thresh	Packet is fragmented when packet size (in bytes) exceeds threshold.	Integer from 256 to 2346.	2346
G Shortslot	802.11g short slot timing mode.	Auto, Off, On	Auto
Admin Password	Password that must be specified when Admin Login button is pressed.	A string of up to 64 characters.	SUMMIT
Hide Passwords	On - SCU as well as EAP authentication dialog boxes hide passwords, WEP keys and other sensitive information.	On, Off	Off

Global Setting	Description	Value	Default
LED	Available only with MCF10G.	On, Off	Off
Preamble	Type of radio preamble or headers.	Auto, Short, Long	Auto
Ping Payload	Amount of data to be transmitted on a ping.	Bytes: 32, 64, 128, 256, 512 & 1024	32
Ping Timeout ms	Amount of time in milliseconds that passes without a response before ping request is considered a failure.	Integer from 0 to 30000.	5000
Ping Delay ms	Amount of time in milliseconds between successive ping requests.	Integer from 0 to 7200000.	1000
Roam Delta	Amount by which second AP's RSSI must exceed the moving average RSSI for the current AP before the radio will attempt to roam to a second AP.	dBm: 5, 10, 15, 20, 25, 30, 35	15
Roam Period	Following an association or roam scan (with no roam), the number of seconds the radio collects RSSI scan data before considering roaming.	Seconds: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60	10
Roam Trigger	If RSSI from AP is less than roam trigger value, radio performs roam scan or probes for an AP with stronger signal.	dBm: -50, -55, -60, -65, -70, -75	-70
RTS Thresh	Packet size above which RTS/CTS is required on link.	An integer from 0 to 2347.	2347
RX Diversity	Defines how to handle antenna diversity when receiving data from AP.	-On-Start on Main: On startup, use main antenna. -On-Start on Aux: On startup, use auxiliary antenna. -Main only: Use main antenna only. -Aux only: Use auxiliary antenna only.	On-Start on Main

Global Setting	Description	Value	Default
TX Diversity	Defines how to handle antenna diversity when transmitting data to AP.	-Main only: Use main antenna only. -Aux only: Use auxiliary antenna only. -On: Use diversity.	On
WMM	Use Wi-Fi Multimedia Extensions, also know as WMM.	On, Off	Off

2.8.4 Status Tab

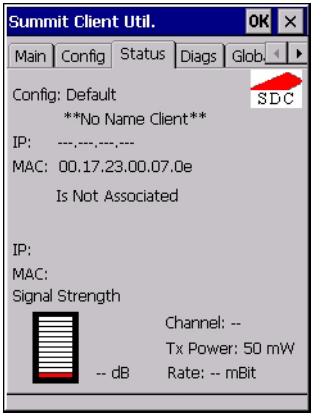

Figure 2.24 SCU Status Tab

The *Status* tab provides status information including IP address and MAC address for the client radio, IP address and MAC address for the AP, signal strength, channel, transmit power and data rate.

2.8.5 Diags Tab

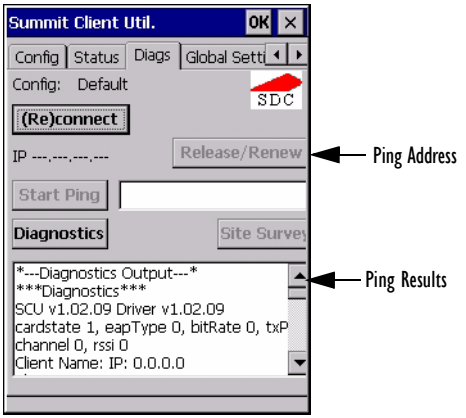

Figure 2.25 Diags Tab

Use the *Diags* tab as a troubleshooting tool. The functions are as follows:

- **(Re)Connect:** Enables/Disables the radio, applies/reapplies current *config* and tries to associate and authenticate to the wireless LAN, logging all activity in the output area at bottom of the dialog box.
- **Release/Renew**: Obtains a new IP address through DHCP and logs all activity in the output area.
- **Start Ping**: Starts a continuous ping to the address in the text box next to this button. This is a toggle button so when you tap on it, it changes to *Stop Ping*. Closing this window or tapping on another button also stops the ping.
- **Diagnostics:** Attempts to connect or reconnect to an AP, and provides a more detailed dump of data than if you used *(Re)connect*. The dump includes the radio state, config settings, global settings and BSSID list of APs. The SCU is saved to a file called *_sdc_diag.txt* in the Windows directory.

2.9 Checking The Scanner

Note: *Details about operating and troubleshooting scanners and RFID readers are provided under the heading* "Internal Scanners" on page 68.

If your 7535 G2 is equipped with an internal scanner, you can test it to ensure that it is operating properly. Point the scanner window at a bar code that your scanner was designed to decode—for example, a 1D UPC bar code or 2D bar code. Press the SCAN button or pistol trigger, and check for a valid decode on the hand-held's screen.

Performance is improved if you disable all unneeded bar codes in the *Bar Codes* screen. Review "Scanner Settings" on page 162 for details about bar codes.

2.10 Data Transfer Between The 7535 G2 And A PC

Data transfer options vary slightly depending on the type of operating system installed in your PC.

For Windows XP SP2 operating systems or earlier, Microsoft® ActiveSync® is PC connectivity software that can be used to connect your 7535 G2 to PCs running this software. To install ActiveSync, follow the step-by-step instructions provided in Appendix C: "Connecting To Windows PCs".

If the Windows Vista® operating system is installed in your PC, Windows Mobile® Device Center is required to transfer data between your 7535 G2 and your PC. To install Windows Mobile® Device Center, follow the step-by-step instructions provided in Appendix C: "Connecting To Windows PCs".

Note: *You'll need to run an application—usbsetup.exe—to configure Windows to recognize the 7535 G2. For information about this USB application, refer to Appendix C: "Connecting To Windows PCs".*

By connecting the 7535 G2 to a PC with a cable you can:

- View 7535 G2 files from Windows Explorer.
- Drag and drop files between the 7535 G2 and the PC in the same way that you would between PC drives.
- Back up 7535 G2 files to the PC, then restore them from the PC to the hand-held again, if needed, and so on.

2.11 Resetting The Hand-Held

Warm Reset

To execute a warm reset:

- Press and hold down the [BLUE] key and the [ENTER/ON] key simultaneously for a minimum of six seconds.

A warm reset closes open applications; any unsaved data are lost. Installed programs and saved data are preserved.

Note: *You do not need to reset your 7535 G2 after configuring the radio.*

Cold Reset

Important: A cold reset returns the 7535 G2 to factory settings.

There are two options when executing a cold reset: reset to the BooSt console or reset directly to the Windows CE operating system.

To execute a cold reset and access the BooSt menu:

- Press and hold down the [BLUE] key, the [ENTER] key, and the [SCAN] key, simultaneously for a minimum of six seconds.

After a cold reset, the BooSt menu appears.

- Type **1** to continue loading the Windows CE operating system.
- If you want a clean start, press **!** (that is, the [SHIFT] key and **1**). All data and settings are lost. Files and data stored in flash are preserved.

To execute a cold reset and launch the Windows CE operating system immediately:

- Press and hold down, in this order, the [BLUE], [ORANGE] and [ENTER] keys for a minimum of 6 seconds.

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3.1 Features Of The 7535 G2

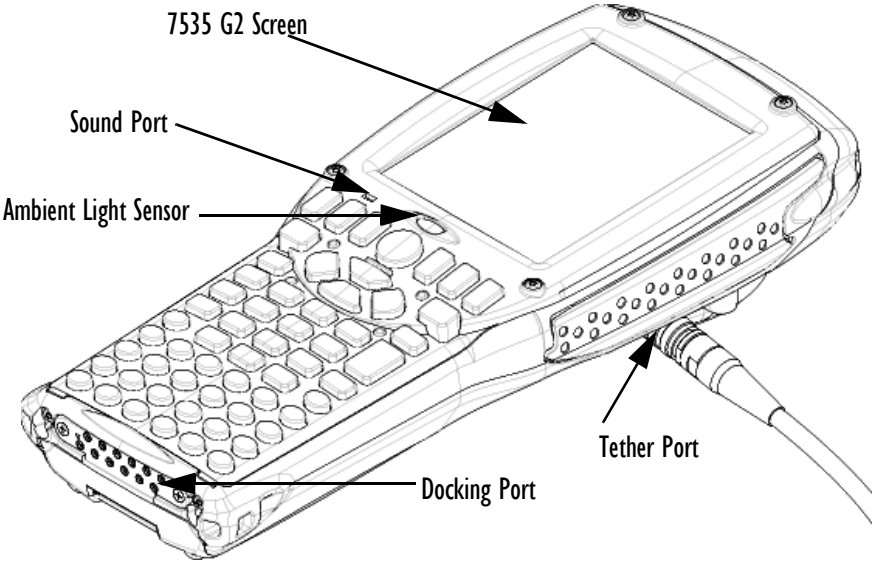


Figure 3.1 Front Of 7535 G2

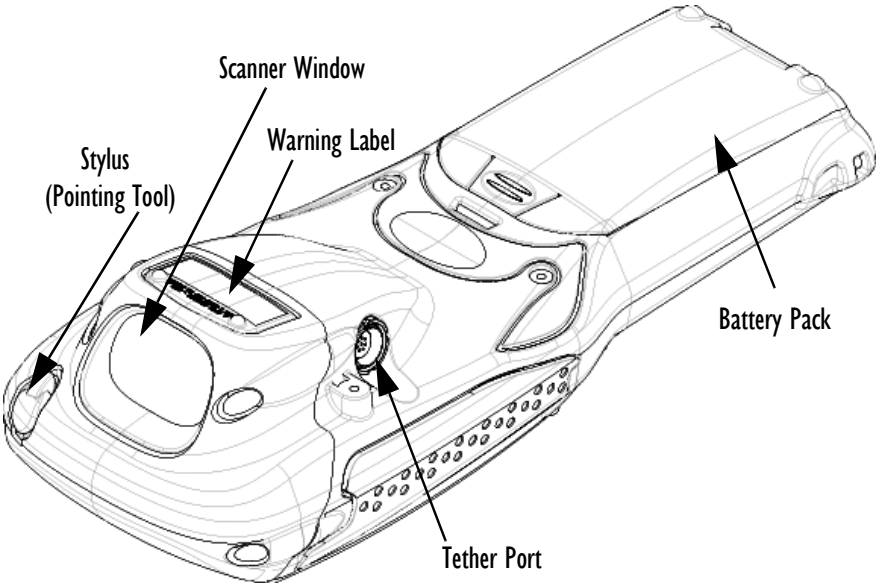


Figure 3.2 Back Of 7535 G2

3.2 The Battery

The hand-held operates with a Lithium-Ion battery pack. Preparing the unit for operation requires that a battery pack be charged and installed in the 7535 G2.

3.2.1 Battery Safety

Important: ***Before attempting to install, use or charge the battery pack, it is critical that you review and follow the important safety guidelines in the section entitled*** "Lithium-Ion Battery Safety Precautions" on page xxiv**.**

3.2.2 Removing And Installing The Battery Pack

Important: ***Always switch the unit off*** **before** ***changing the battery. If you do not turn the hand-held off before removing the battery, it may be necessary to reboot the unit. Any active sessions may be lost. While the battery is being replaced, the 7535 G2 will save its current data for up to 20 minutes.***

Removing The Battery Pack

- If your unit is equipped with a hand strap, unhook it from the base of the battery.
- Press down the release tab at the top of the battery, and slide the battery out.

Note: *If your hand-held is equipped with a battery contact protective gasket (P/N 1020250), to remove the battery, you will need to hold the 7535 G2 face down with both hands, making certain that your fingers are not touching the keypad. Press down firmly on the battery release with both thumbs and slide the battery out.*

Installing The Battery Pack

To install the battery pack:

- Slide the battery pack with the contoured plastic facing you into the 7535 G2. Click the battery into place.

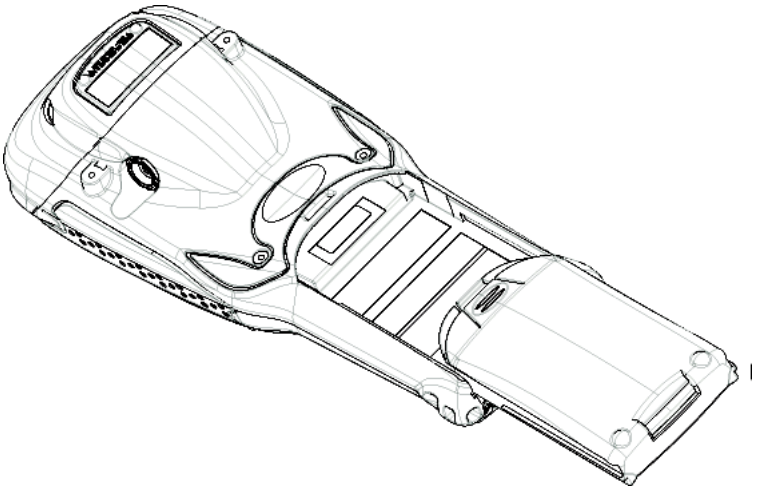


Figure 3.3 Installing The Battery Pack

- If your computer is equipped with a hand strap, insert the hook at the end of the hand strap into the slot at the base of the battery.

3.2.3 Battery Chargers

Important: ***FOR DETAILED INFORMATION about chargers and docking stations, refer to*** Chapter 6: Peripheral Devices & Accessories ***beginning on page 237. For battery safety, refer to*** "Lithium-Ion Battery Safety Precautions" on page xxiv**.**

All batteries must be charged before use. The battery can be charged with a variety of chargers. These include:

- 6-Unit Gang Charger (Model #HU3006): charges up to six Lithium-Ion batteries at one time.
- Portable Docking Module (Model #HU4001 or HU1005 and HU3220): charges the 7535 G2 battery (with the battery installed in the unit).
- Combo Charger (Model #HU3002): a desktop charger that charges the internal battery along with a spare battery pack.
- Combo Docking Station (Model #HU4002): operates as both a charger and a docking station. Operating as a charger, both the battery installed in the computer and a spare battery can be charged simultaneously.

- Quad Docking Station (Model #HU4004): can charge the battery of up to four hand-helds inserted in the docking station while transferring data through an Ethernet connection.
- Powered Cradle (Model # HU1010): can charge the hand-held with the battery installed in the hand-held.

It can take from 1.5 to 4 hours to charge a battery. The unit's intelligent charging system protects the battery from over-charging by terminating the charge process when the battery is at maximum capacity.

Note: *Refer to* "Monitoring The Battery And Maximizing Run Time" on page 74 *for additional information about the battery.*

Important: ***To avoid damaging the battery, chargers will not begin the charge process until the battery temperature is between 0° C (32° F) and 39° C (102° F). If the battery is too hot or cold, the battery status LED flashes yellow and the charge is suspended. Refer to*** Table 3.1, "Charge LEDs" on page 63 ***for details.***

3.3 Switching The Hand-Held On And Off

Switching On The Unit

- Press and hold down the [ENTER/ON] key for at least one second.
- When all four LEDs flash yellow, release the [ENTER/ON] button.

Note: *If the 7535 G2 is in suspend state, pressing [ENTER/ON] key 'wakes' the unit from this state. The screen in which you were working before the computer entered suspend state is displayed.*

Switching Off The Unit

Important: ***Keep in mind that turning off the 7535 G2 does <u>not</u> result in a complete reboot; rather, the unit enters a power-saving, "suspend" state. When the 7535 G2 is turned on from suspend state, operation resumes within a few seconds.***

To switch off the 7535 G2:

- Press the [BLUE] key, and then press the [ENTER/ON] key.

Important: ***If the word 'BLUE' is displayed in uppercase in the taskbar area at the bottom of the screen, this key is locked "on" and the 7535 G2 will not switch off. Press the [BLUE] key twice followed by [ENTER/ON] to switch the 7535 G2 off.***

If, however, you've disabled the "Blue Key" in the 'One Shot' dialog box (see "Keyboard One Shot Modes" on page 115***), the 7535 G2 can be turned off even when the [BLUE] key is locked 'on'.***

3.4 The Keyboard

The 7535 G2 offers two types of keyboard layouts: a 58-key keyboard and a 36-key, large button keyboard. Most of the keys on these keyboards operate much like a desktop computer. Where a key or key function is not consistent with the PC keyboard, the differences are noted.

The [BLUE] and [ORANGE] modifier keys provide access to additional keys and system functions. These functions are colour coded in *orange* and *blue* print above the keyboard keys.

3.4.1 Modifier Keys

The [SHIFT], [CTRL], [ALT], [BLUE] and [ORANGE] keys are *modifier* keys. Pressing a modifier key changes the function of the next key pressed. For example, on a 7535 G2 58-key keyboard, a square bracket is printed in *orange* print above the [4] key. Pressing the [ORANGE] key followed by the [4] key displays a square bracket rather than the number 4.

The [SHIFT], [CTRL] and [ALT] keys operate much like a desktop keyboard except that they are not chorded (two keys held down simultaneously). The modifier key must be pressed first followed by the key whose function you want modified.

3.4.1.1 Activating Modifier Keys

When a modifier key is pressed once, it is displayed in lowercase letters in the taskbar at the bottom of the hand-held screen. For example, if the [CTRL] key is pressed, ctrl key is displayed at the bottom of the unit screen. Once the next key is pressed, the modifier key becomes inactive and disappears from the taskbar.

3.4.1.2 Locking Modifier Keys

When a modifier key is pressed twice, it is 'locked' on. A 'locked' modifier key is displayed in uppercase letters in the taskbar. For example, pressing the [BLUE] key twice locks it on—it is displayed as BLUE KEY in the taskbar at the bottom of the computer screen.

The locked modifier key will remain active until it is pressed a third time to unlock or turn it off. Once a modifier key is unlocked, the uppercase representation at the bottom of the screen is no longer displayed.

Note: *The locking function of the [ORANGE] and [BLUE] keys can be disabled so that pressing either of these keys* ***once*** *will lock the keys 'on'. If you disable the 'One Shot' function of either of these keys, pressing the [BLUE] and/or [ORANGE] key once will lock the key 'on'. Pressing the same key a second time will unlock or turn it 'off'. Refer to* "Keyboard One Shot Modes" on page 115 *for details.*

3.4.2 The Keys

The [SHIFT] Key

The [SHIFT] key is used to display uppercase alpha characters and provide access to the symbols above the numeric keys.

The Arrow Keys

The Arrow keys move the cursor around the screen in the direction of the arrow: up, down, left and right. The cursor is the flashing box or underline character that indicates where the next character you type will appear.

The [BKSP/DEL] Key

The [BKSP] key (sometimes referred to as destructive backspace) moves the cursor one character to the left, erasing the incorrectly entered key stroke.

The [DEL] key ([BLUE] [BKSP]) erases the character at the cursor position.

The [CTRL] And [ALT] Key

The [CTRL] and [ALT] keys modify the function of the next key pressed and are application dependent.

The [TAB] Key

Typically, the [TAB] key moves the cursor to the next field to the right or downward.

The [ESC] Key

Generally, this key is used as a keyboard shortcut to close the current menu, dialog box or activity and return to the previous one.

The [SPACE] Key

Pressing this key inserts a blank space between characters. In a Windows dialog box, pressing the [SPACE] key enables or disables a checkbox.

The [SCAN] Key

Pressing the [SCAN] key—the yellow key with the star-burst scan symbol on it—activates the scanner beam while pressed. For units that ***do not have*** internal scanners, this key can be re-mapped to another function.

3.4.3 Function Keys, Softkeys And Macro Keys

In addition to the standard keyboard functions (see "The Keyboard" on page 53), The 7535 G2 supports function keys, softkeys and macro keys.

3.4.3.1 Function Keys

58-Key Keyboard Function Keys

The 7535 G2 58-key keyboard is equipped with thirty function keys. Function keys [F1] to [F6] are located across the top of the keyboard and are directly accessible, a key combination is not required. Function keys [F7] to [F30] are colour coded in blue print above the alpha keys and are accessed using a key combination, [BLUE] followed by the appropriate alpha key.

To access function keys [F7] to [F30]:

- Press the [BLUE] key followed by the alpha key to which the function key you want to use is mapped. For example:
  To access function key [F7], press [BLUE] [C].
  To access function key [F8], press [BLUE] [D], and so on.

36-Key Keyboard Function Keys

The 36-key keyboard is equipped with thirty function keys. Function keys [F1] to [F4] are located across the top of the keyboard and function keys [F5] to [F10] are located at the bottom of the keyboard.

Additional function keys, [F11] to [F20], are colour coded in orange print above function keys [F1] to [F10].

To access function keys [F11] to [F20]:

- Press the [ORANGE] key followed by the appropriate function key.
  For example:
  To access function key [F11], press the [ORANGE] key followed by [F1].
  To access function key [F12], press [ORANGE] followed by [F2],
  and so on.

To access function keys [F21] to [F30], you'll need to press [SHIFT] [F1] to [F10].

To access function keys [F21] to [F30]:

- Press the [SHIFT] key followed by the appropriate function key.
  For example:
  To access function key [F21], press the [SHIFT] key followed by [F1].
  To access function key [F22], press [SHIFT] followed by [F2],
  and so on.

3.4.3.2 Macro Keys

Important: ***Refer to*** "Keyboard Macro Keys" on page 116 ***for details about creating macros.***

7535 G2 hand-helds are equipped with a series of macro keys that can be programmed to replace frequently used keystrokes, along with the function of executable keys like the [ENTER] key, the [BKSP] key, any function key and arrow key, and so on.

Alphanumeric Keyboard Macro Keys

Alphanumeric (58-keys) keyboards have twelve macro keys: [M1] to [M12]. These keys are colour coded in orange print above alpha keys [O] to [Z].

To access a macro key:

- Press the [ORANGE] key followed by the appropriate alpha key from O to Z. For example:
  To access macro key [M1], press [ORANGE] [O].
  To access macro key [M2], press [ORANGE] [P], and so on.

Numeric Keyboard Macro Keys

Numeric keyboards (36-keys) are equipped with six macro keys: [M1] to [M6]. Macro keys [M1] to [M2] are directly accessible in the bottom row of the keyboard—a key combination is not required.

Macro keys [M3] and [M4] are colour coded in orange print above macro keys [M1] and [M2].

- To access [M3], press the [ORANGE] key followed by [M1]
- To access [M4], press [ORANGE] [M2].

Macro keys [M5] to [M6] are colour coded in blue print above macro keys [M1] and [M2].

- To access [M5], press the [BLUE] key followed by [M1].
- To access [M6], press [BLUE] [M2].

3.4.4 Alphanumeric Keyboard: 58-Key

In addition to alphanumeric keys that are directly accessible on the keyboard (no key combination is required) and the keys described in this chapter, the 58-key keyboard also provides function keys and macro keys.

Function keys [F1] through [F24] can be used with the CE operating system or another application. The additional function keys, [F25] through [F30] along with the macros, are not used as part of the Windows CE operating system.

All function keys and macro keys can be custom defined for each application. The TekTerm application utilizes these keys (for detailed information, see the *TekTerm Software User Manual, P/N 8000073)*. Refer to “Function Keys, Softkeys And Macro Keys” on page 55 for details about accessing function keys [F25] to [F30].

3.4.5 Numeric Keyboard: 36-Key

On 36-key 7535 G2s, all alpha characters are printed on the unit plastic in orange typeface above the numeric keys. An indicator in the left corner of the taskbar displays the currently selected character. To access an alpha character, first press the [ORANGE] key and then press the numeric key above which the alpha character you want to type is printed.

Choosing A Single Alpha Character

Note: *The following examples assume that the [ORANGE] key is enabled as 'Lock' mode in the 'One Shot' screen (accessible through the Control Panel* Keyboard *icon). In 'Lock' mode, pressing the [ORANGE] key once locks it 'on'. Refer to* "Keyboard One Shot Modes" on page 115 *for details.*

The examples below illustrate how to access A, B and C, all of which are printed in *orange* characters above the numeric key, [2].

To choose the letter *'a'*:

- Press the [ORANGE] key, and press the numeric key [2].
- Press the [ORANGE] key again to unlock or turn it off.

To choose the letter *'b'*:

- Press the [ORANGE] key, and press [2] twice.
- Press the [ORANGE] key again to unlock or turn it off.

To choose the letter *'c'*:

- Press the [ORANGE] key, and press [2] three times.
- Press the [ORANGE] key again to unlock or turn it off.

Creating Uppercase Letters

To display a capital letter:

- Press the [ORANGE] key and then the [SHIFT] key before typing the alpha character.

Note: *If you want to use uppercase characters at all times, press [BLUE] [SHIFT]. An icon of an uppercase 'A' is displayed in the taskbar indicating that all letters will be displayed as uppercase characters.*

Choosing Multiple Characters From The Same Key

If you need to choose more than one alpha character from a single key, you'll need to press the **Accept** key between alpha selections. The *Accept* key is presented as an arrow ⇒ symbol above the *0* (zero) key.

For example, suppose you want to type the letters *'a'*, *'b'* and *'c'*. These letters are all accessible from the numeric key, [2].

To type the letter *'a'*:

- Press the [ORANGE] key, and then press the numeric key, [2].

- Press the **Accept** key [⇒] (zero key) to indicate that the letter *'a'* should be accepted and that another letter from the same key will be chosen.

To type the letter *'b'*:

- Press the [2] key twice, and press [⇒] to accept the letter *'b'*.

To type the letter *'c'*:

- Press the [2] key three times.

When you have completed your alpha selections *from this key*, you can do one of the following:

- If you want to choose additional alpha characters from ***another*** key(s), leave the [ORANGE] key 'on', and press the numeric key with the alpha character you require, ***or***
- If you ***do not*** want to choose any additional alpha characters, press [ORANGE] again to unlock or turn 'off' the key and end alpha selection.

Choosing Multiple Characters From A Range Of Keys

If you plan on choosing alpha characters from a number of different keys, you are ***not*** required to press the *Accept* [⇒] key after each alpha selection. The [⇒] key is only required when you are choosing more than one alpha character from the ***same*** key, e.g. *'a', 'b'* and *'c'* from the [2] key.

Suppose you want to type the letters *'a'*, *'d'* and *'g'*. These alpha characters are accessed from the numeric keys [2], [3] and [4].

- With the [ORANGE] key locked 'on', press [2] to type the letter 'a'.
- Press [3] to type *'d'*, and press [4] to type the letter *'g'*.
- To end alpha selection, press the [ORANGE] key again to unlock it.

3.4.6 The Keypad Backlight

The intensity of the keypad backlight and the conditions under which this backlight is activated can be configured using the *Keyboard* icon in the Windows CE *Control Panel*. The behaviour of the keypad backlight is tailored in the *Keyboard Properties* dialog box. Refer to "Keyboard Backlight" on page 114 for details about this option.

Note: *Keep in mind that this option may be restricted to supervisory use only.*

3.5 The Display

7535 G2s are equipped with display backlighting to improve character visibility in low light conditions. The backlight switches on when a key is pressed and the ambient light is below the set threshold. A light sensor on the front of the hand-held determines the ambient light level. On some displays, the contrast can also be adjusted to further improve character visibility.

3.5.1 Adjusting The Display Backlight

The behaviour of the display backlight (the ambient light threshold below which the backlight will become active) and the intensity of the backlight can be specified in the *Display Properties* dialog box in the *Control Panel*.

Note: ***Refer to*** "Display Backlight" on page 110 ***for details about the Display Properties dialog box.***

3.5.2 Adjusting The Contrast

Note: *In addition to the manual adjustments described in this section, the display contrast can also be adjusted using the Windows CE Control Panel. Refer to* "Display Backlight" on page 110 *for details about this dialog box.*

The display contrast can be adjusted from the unit keyboard using the [BLUE] key and function keys [F1] and [F2]. Pressing [F1] ◑⁺ darkens the display, and pressing [F2] ◑⁻ lightens the display. Keep in mind that adjusting the contrast on a colour display is much less pronounced than on a monochrome display.

To adjust the display contrast:

- Press the [BLUE] key twice to lock it on, and then press [F1] ◑⁺ to darken the display or [F2] ◑⁻ to lighten the display.
- Once you've successfully adjusted the display contrast, remember to press the [BLUE] key again to turn it 'off'.

Note: *Contrast settings are optimized for the maximum readability. However, if the display jitters or flickers, consider adjusting the contrast at power up.*

3.5.3 Calibrating The Touchscreen

If your 7535 G2 touchscreen has never been calibrated, or if you find that the stylus pointer is not accurate when you tap on an item, use the *Stylus Properties* dialog box in the *Control Panel* to recalibrate the screen.

- In the *Control Panel*, choose the **Stylus** icon to display the *Stylus Properties* window.

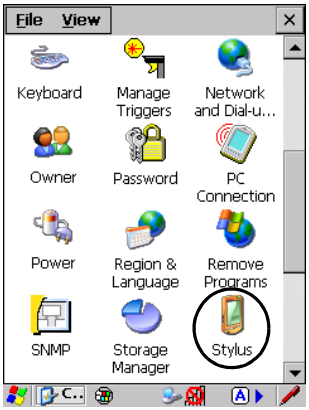


Figure 3.4 Stylus Icon

- Select the **Calibration** tab, and then choose the **Recalibrate** button.

Figure 3.5 Calibration Screen

- Follow the directions on the calibration screen to calibrate the screen.

3.6 7535 G2 Indicators

7535 G2s use LEDs (Light Emitting Diodes), onscreen messages and audio tones as indicators.

3.6.1 LEDs

Hand-helds are equipped with four tri-coloured LEDs. This section outlines what these LEDs indicate.

Important: ***If an LED is illuminated in red, the operator should be cautious as this generally indicates an abnormal operating condition or active laser emission.***

Figure 3.6 Keyboard LEDs

3.6.1.1 Charge LED

The lower-right LED is reserved for internal charger/power status. This indicator is active even when the hand-held is inserted in a docking station (and in suspend mode) so that the charge status of the battery can be detected easily.

Function	Charge LED Behaviour
External power not available.	LED off.
Fully charged to within 95% of charge capacity.	LED displays solid green colour.
Quick charge successfully completed to within 75% of charge capacity.	LED flashes slow green.
Charge in progress.	LED displays solid yellow colour.
Cell temperature out of range for charge.	LED flashes yellow.
Unable to charge battery.	LED displays solid red colour.
Charge circuit failure.*	LED flashes fast red.*

Table 3.1 Charge LEDs

* *If the charge fails, refer to the charger troubleshooting sections in Chapter 6: "Peripheral Devices & Accessories" for helpful details.*

3.6.1.2 Radio Traffic LED

The upper-left LED on your unit flashes either yellow or green to indicate when the radio transmits and receives data.

Note: *Keep in mind that while the standard 802.11g radio supports the transmit/receive LED, not all radios support this function.*

Function	Radio Traffic LED Behaviour
Radio Transmit	LED flashes yellow.
Radio Receive	LED flashes green.

Table 3.2 Transmit and Receive LEDs

3.6.1.3 Scan LED

Successful scans are indicated in two ways: with a scan LED and with an audio tone.

Function	Scan LED Behaviour
Scan in progress	LED displays solid red during scan.
Successful scan	LED displays solid green after decode. Off when scan ended.
Unsuccessful scan	LED flashes red.

Table 3.3 Scan LED

3.6.1.4 User Application LED

This indicator is available for user-loaded custom Windows CE applications. Refer to the *7535 G2 SDK Manual* for details about this LED. Neither Windows CE nor TekTerm use this LED.

3.6.2 Onscreen Indicators

The taskbar at the bottom of the screen displays a variety of system status indicators.

Figure 3.7 Taskbar

The taskbar changes dynamically, and only those icons that are applicable are displayed. For example, if a radio is not installed in your 7535 G2, the radio signal icon is not displayed in the taskbar.

Windows® Start Button

If you are using the touchscreen, you can either tap the Windows icon at the bottom left of the screen, or press [BLUE] [0] to display the *Start Menu*, and then tap on the desired application.

Modifier Key Indicators

[SHIFT], [CTRL], [ALT], [BLUE] and [ORANGE] are modifier keys that have onscreen indicators to show when a key is active or locked. If a modifier key is pressed once to activate it, the key is displayed in the taskbar in *lowercase* characters, for example, pressing the [BLUE] key once displays **blue key** in the taskbar. If a modifier key is pressed twice, it is 'locked on' and the onscreen indicator is displayed in *uppercase* letters in the taskbar, for example, pressing [BLUE] twice displays **BLUE KEY** in the taskbar.

Battery Gauge

The battery shaped icon displayed in the taskbar provides a visual indication of the remaining battery power. The icon acts as a meter that is either full, at three-quarter level, half, quarter level or empty.

When the battery level is low—approximately 15 minutes from empty—a warning window pops up. When the battery power is completely depleted, a final warning window indicates that the 7535 G2 will be powered down.

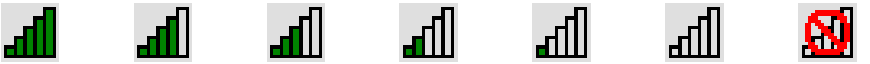
If the 7535 G2 is using external AC power, an AC icon is displayed in the taskbar.

Battery Charge

The battery charge icon is displayed in the taskbar when the hand-held battery is being charged.

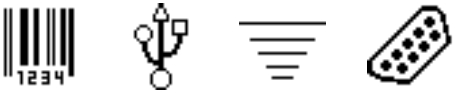
802.11 Radio Signal Quality

Increasing radio signal quality is represented by longer, filled bars within this icon.



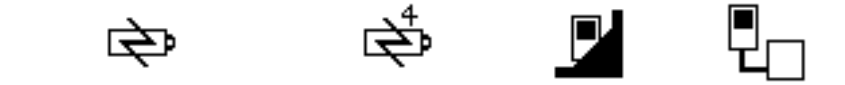
Tethered Devices

When a peripheral is attached to the tether port and activated, an associated icon appears in the taskbar.



Docking Device

When a hand-held is inserted in a docking station, charger or cradle, an associated icon appears in the taskbar.



Bluetooth Radio

This icon displayed in the taskbar represents the installed *Bluetooth* radio.

Security Level

Security levels can be set to limit user access. In addition, applications can be restricted to prevent inadvertent changes.

Wireless WAN

These icons provide access to and information about the 7535 G2 GSM/GPRS wide area networking status. Refer to Appendix D: “Wireless WAN” for details about each of these taskbar icons.

3.6.3 Audio Indicators

The beeper provides a variety of sounds and can be configured to emit a sound when a key is pressed, a keyboard character is rejected, scan input is accepted or rejected, an operator’s entry does not match in a match field or the battery is low. The volume function keys are located in the top row of the keyboard. The *increase* volume key is labelled with a plus symbol and the *decrease* volume function key is labelled with a minus symbol.

3.6.3.1 Adjusting The Beeper Volume

On 58-key and 63-key keyboards, the volume function keys are accessed by pressing [BLUE] [F5] and [F6].

On 36-key and 37-key keyboards, the volume function keys are accessed by pressing [BLUE] [F3] and [F4].

To adjust the beeper volume:

- Press the [BLUE] key twice to lock the key ‘on’ and then, press the *increase volume* function key or the *decrease volume* function key until the volume meets your requirements.
- Remember to press the [BLUE] key again to turn it ‘off’.

3.7 Internal Scanners

Important: ***For detailed scanner specifications and decode zone tables, refer to*** "Internal Scanner Specifications" ***beginning on page 267.***

The 7535 G2 supports a wide range of scanner options to address a variety of user application requirements. The scanner installed in your unit can be configured using the *Scanner Settings* dialog box in the *Control Panel* (see page 162) and the *Manage Triggers* application (see page 130). External, *non-decoded* scanners are also configured through the *Scanner Settings* and *Manage Triggers* applications.

However, external *decoded* scanners must be configured by scanning special configuration bar codes. In these cases, the scanner manufacturer provides programming manuals for configuration purposes.

- For Symbol decoded scanners, refer to the appropriate programming guide:
  - LS3408
- For Symbol non-decoded scanners, refer to the *LS3200 Programming Guide*.
- For PowerScan® (PSC) decoded and non-decoded scanners, refer to the *PowerScan Programing Guide (PSC)*.

Scanner types include:

- Advanced Long Range: reads very large 1D bar codes (60 mil+) at very long distances (up to 14m).
- Long Range: reads large 1D bar codes (55 mil) at long distances (up to 3m).
- High Performance: reads 1D linear bar codes (5 - 55 mil) at medium distances (up to 1m).
- Extended Range: reads regular 1D bar codes (5 - 55mil) at short to medium distances (1m), as well as large 1D bar codes (e.g. 55 mil) at long distances.
- RFID: The RD7950 UHF RFID Reader is an EPC-compliant 900MHz RFID reader which can be integrated with laser bar code scanning or imaging.
- Fuzzy Logic: reads damaged or low contrast regular 1D bar codes (5 - 55mil) at medium distances (up to 1m).
- PDF Raster Laser: reads 2D PDF bar codes or regular 1D bar codes at short to medium distances.
- 2D Imager: reads regular 1D and all 2D bar codes at short to medium distances.
- 1D Imager: reads regular 1D and PDF417 bar codes at short to medium distances.

It is critical that you review the "Laser Warnings" on page xxiii in the "Approvals and Safety" section at the beginning of this manual before using any of the scanners described in this chapter. "Scanning Techniques" on page 69 outlines the mechanics of a successful scan. In addition, review "Scan LED Indicators" on page 69 to better understand how to interpret whether or not a bar code has been successfully scanned. Finally, "Troubleshooting" on page 70 provides some helpful suggestions should the scan fail.

3.7.1 Scanning Techniques

Note: *The scanning techniques described here apply to internal and external scanners.*

- Hold the scanner at an angle. Do not hold it perpendicular to the bar code.
- Do *not* hold the scanner directly over the bar code. In this position, light can reflect back into the scanner's exit window and prevent a successful decode.
- Scan the entire bar code. If you are using a 1D or PDF laser scanner, make certain that the scan beam crosses every bar and space on the bar code, including the margins on either end of the symbol.
- If you are using a 2D imaging scanner, make certain the red, oval shaped framing mark is centered within the bar code you want to scan.
- When using imaging scanners, do not move the scanner while decoding the bar code. Movement blurs the image.
- Hold the scanner farther away for larger bar codes.
- Hold the scanner closer for bar codes with bars that are close together.

3.7.2 Scan LED Indicators

The scanner LED (the lower-left LED) indicates whether or not your scan is successful. The LED behaves as follows:

- Scan In Progress: scan LED displays solid red colour.
- Successful Scan: scan LED displays solid green colour and turns off when the scan is ended.
- Unsuccessful scan: scan LED flashes red.

A bar code icon appears on the screen during a scan. While the scanner beam is active, the onscreen message states: SCANNING. If you want to turn off the onscreen message, disable "Scan Indication" in the *Options* tab of the *Scanner Settings* menu in the Control Panel

When the scan is successful, the bar code data is displayed on the screen until the scan button (or pistol trigger) is released, but only if "Scan Result" is turned on in the *Options* tab of the *Scanner Settings* menu in the Control Panel.

3.7.3 Troubleshooting

If the scanner is not working, investigate the following:

- Is the unit on?
- Check that the bar code symbology being scanned is enabled for the hand-held you are using. Check any other parameters that affect the scanning procedure or the bar code.
- Check the bar code to make sure it is not damaged. Try scanning a different bar code to verify that the problem is not with the bar code.
- Check that the bar code is within the proper range.
- Does the hand-held display the warning without scanning? This suggests a hardware problem in the hand-held.
- Is the laser beam scanning across the bar code?
- Once the scan beam has stopped, check the scanner window for dirt or fogging.

3.7.4 Operating One Dimensional (1D) Internal Laser Scanners

- Turn the hand-held on. Wait until the unit has booted up completely.

Important: ***If an aiming dot is available on the installed scanner, the dot will be enabled for a configurable time period (including off), after which normal scanning begins. Refer to*** "Dot Time (msec)" on page 209 ***for details.***

Double-clicking the trigger will override the aiming delay and initiate an immediate scan. Note that the aiming dot is standard on long-range and high visibility internal scanners.

- Aim at the bar code and press the scan key or the trigger. A scan beam and a warning indicator appear until a successful decode is achieved or six seconds have elapsed.

3.7.5 Operating Internal PDF Laser Scanners

This scanner decodes PDF417 two-dimensional bar codes.

- Turn the hand-held on. Wait until the unit has booted up completely.
- Aim at the bar code and press the scan key or the trigger. The beam expands into a rectangle covering the bar code to properly scan it. The scan beam and a warning indicator are visible until a successful decode is achieved or three seconds have elapsed.

3.7.6 Operating Internal Two Dimensional (2D) Imager Scanners

An imager scanner takes a snap shot of a single bar code or multiple bar codes (at one time). It can find a bar code regardless of its orientation—that is, even a bar code printed at a 45 degree angle to the hand-held will be decoded successfully.

Note: *When scanning **multiple** bar codes, ensure that all of the desired bar codes are within the field of view of the scanner. It is possible that even when all bar codes are within the field of view, not all of them will be decoded. Only successfully decoded bar codes are passed to the application program. The application program then issues a warning, asking that you scan the missing bar codes.*

*When scanning a **single** bar code, ensure that only the desired bar code is within the field of view of the scanner.*

Because imager scanners generally have a shorter depth of field than laser scanners, some practise may be required to find the optimal distance from the types of bar codes being scanned. Although the imager includes illumination LEDs, ambient light will help the imager decode the bar codes, especially if the bar code is far from the hand-held.

Important: ***Keep in mind that the imager scanner is a camera, and the LED illumination is a flash. Glare can be an issue on reflective media such as plastic coated bar codes, just as glare is an issue for photographers. When pointing at a shiny surface, either shift the bar code to the side or top, or angle the bar code so that the glare reflects away from the imager scanner.***

Most imagers take several 'snap shots' of the bar code in order to decode it. It is normal for the LEDs to flash two or three times. Hold the unit steady between flashes to improve decode performance.

- Turn the hand-held computer on. Wait until the unit has booted up completely.
- Aim at the bar code and press the scan key or the trigger. Hold the trigger until a successful or failed scan result is obtained.
- When the scan button or trigger is pressed, a red, oval shaped light (the framing marker) is displayed. Centre the framing marker in the field—either in the centre of the bar code you want to scan or in the centre of the area in which multiple bar codes are to be scanned.

The illumination LEDs will flash (typically several times) and a picture of the bar code(s) is taken.

3.7.7 Operating RFID/Scanner Modules

For detailed information on the RD7950 UHF RFID Reader please refer to the *RD7950 UHF RFID Reader Quick Reference Guide (P/N 8000056)*.

Important: ***For successful reads, the distance from the hand-held to the RFID tag varies depending on the type of tag.***

3.8 Connecting And Disconnecting Tethered Peripherals

Tethered peripherals such as scanners and printers connect to the hand-held computer with a quick release, circular connector. When a peripheral is connected to the hand-held, the unit detects the peripheral and loads the necessary drivers for it. An icon in the taskbar at the bottom of the screen provides a visual representation of the peripheral and indicates that it is ready for operation. To attach the peripheral to the round, tether port on the side of the unit:

- Insert the barrel of the plug into the tether port and rotate slowly until it clicks into place. The red dot on the port and on the connector should be aligned.

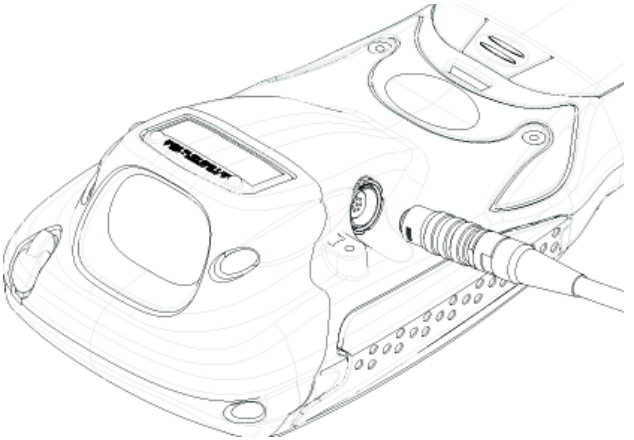


Figure 3.8 Attaching The Cable To The Tether Port

To remove the peripheral:

- Grasp the *shell* of the plug, and pull it back gently to unlock and release the connector.

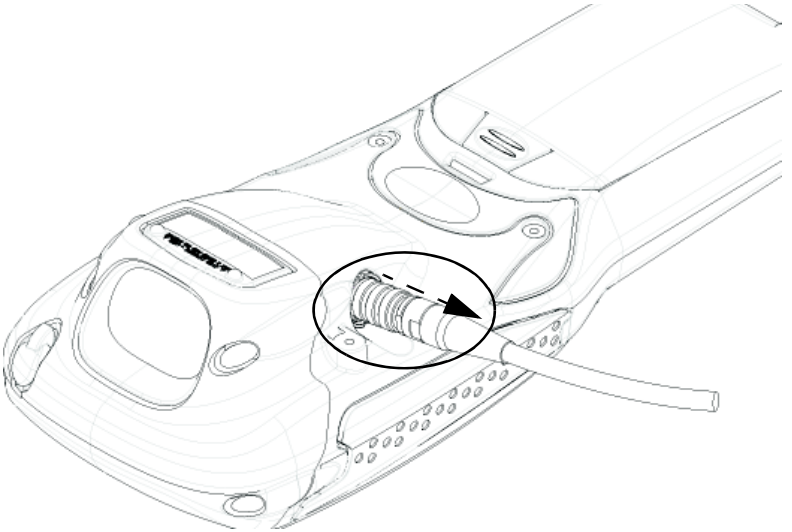


Figure 3.9 Disconnecting The Tether Cable

Important: ***Never attempt to disconnect a peripheral by pulling the connector by the wire. The connector is locked into place and can only be unlocked and removed by pulling back the plug shell.***

3.9 Monitoring The Battery And Maximizing Run Time

Under normal operating conditions, fully charged batteries last for 8 hours. As Lithium-Ion batteries age, their capacity decreases gradually, and they are generally considered depleted after approximately 2 years of use (less than 60% of original capacity remaining). Keep in mind however that heavy usage or operating the 7535 G2 at temperature extremes will shorten the battery life.

Lithium-Ion batteries do not require conditioning cycles and the 7535 G2 battery system (including chargers) requires no user interaction to maintain peak performance.

To maximize the run time of your batteries, consider the following:

- The display backlight is the largest drain on the battery. Try to keep its brightness as low as possible. Adjusting the keyboard backlight also helps.
- The hand-held is 'event' driven. That is, when the unit is not in use, it reverts to *sleep* mode (even when it appears to be running), saving battery power. Events include a key press, touchscreen taps and scan triggers. Power consumption is reduced if you avoid unnecessary events, and allow the unit to *sleep* as much as possible.
- The hand-held battery is a 'smart battery' with built-in intelligence. The taskbar battery icon is a linear gauge used to estimate the remaining run time of the battery. It is important to note that the battery capacity icon displays quarter percentages of *nominal* capacity (the capacity of a new battery). An aged battery, even when fully charged, shows somewhat less capacity than nominal.

  Double-tapping on the battery icon displays a dialog box that provides detailed information about the battery status and performance. If the remaining capacity indication seems inaccurate, the battery may need recalibration. Recalibration requires that the battery be fully charged, discharged and then charged again before use. *If the battery is fully discharged and charged on a regular basis, recalibration should not be necessary.*
- When the hand-held is switched off, it goes into a low-power, suspend state but continues to draw a small amount of power from the battery. This should not be an issue unless the unit is left in suspend state for more than a week—in this case, the battery should be removed.
- Batteries left unused for durations of more than one or two months should be fully charged, operated in the hand-held until the battery is empty (i.e. the low battery warning appears), and then charged again before use. This recalibrates the gas gauge and allows the internal electronics to determine

the actual capacity of the battery. See “Battery Gas Gauge Calibration” on page 240 for a detailed discussion of battery calibration.

3.9.1 Storing Batteries

Long term battery storage is not recommended. If storage is necessary:

- Always try to use a ‘first-in first-out’ approach to minimize storage time.
- Lithium-Ion batteries age much faster at elevated temperatures. Store batteries at temperatures between 0° C and 20°C.
- Always charge batteries to 40 to 60% before storing them. Batteries can be damaged by an over-discharge phenomenon that occurs when an empty battery is stored for a long period of time such that the cell voltage drops below a lower limit.
- To minimize storage degradation, recharge stored batteries to 40 to 60% every 4 or 6 months to prevent over-discharge damage.
- A ‘never used’ Li-Ion battery that has been stored for 3 years may have limited or no useful life remaining once put into service. Think of batteries as perishable goods.

3.10 Monitoring The Network Connection

If your hand-held is equipped with a wireless LAN radio, it will typically associate with the nearest access point. The radio signal quality meter in the taskbar indicates the relative strength of the communication link.

To access the radio signal icon:

- Tap on the radio icon in the taskbar to display the wireless statistics dialog box.

To access the radio signal icon using the keyboard:

- Press [BLUE] [0] to display the *Start Menu*.
- Highlight **Shortcuts** and then choose **System Tray** from the sub-menu.
- Use the [LEFT] and [RIGHT] arrow keys to highlight the **radio signal** icon in the taskbar.
- Press [ENTER] to display the *Wireless Statistics* dialog box.

Note: *Moving in and out of the radio coverage area can have varying effects on a network session. At times, you may need to renew your connection by logging in again.*

3.11 Uploading Data In A Docking Station

The Combo Docking and Quad Docking peripherals allow your hand-held to link to an Ethernet network. They are typically used to upload transaction data to a server computer when a radio link is not available. When a 7535 G2 is properly inserted in a docking station, a dock icon is displayed in the taskbar at the bottom of the unit screen. The hand-held also detects the presence of the Ethernet network. Review the documentation provided with the user application installed in your 7535 G2 before preforming data uploads.

3.12 General Maintenance

3.12.1 Caring For The Touchscreen

The touchscreen is covered with a thin, flexible polyester plastic sheet with a conductive coating on the inside. The polyester can be permanently damaged by harsh chemicals and is susceptible to abrasions and scratches. Using sharp objects on the touchscreen can scratch or cut the plastic, or crack the internal conductive coating. The chemicals listed below must not come into contact with the touchscreen:

- mustard, ketchup
- sodium hydroxide,
- concentrated caustic solutions,
- benzyl alcohol, and
- concentrated acids.

If the touchscreen is used in harsh environments, consider applying a disposable screen protector (P/N HU6110). These covers reduce the clarity of the display slightly but will dramatically extend the useful life of the touchscreen. When they become scratched and abraded, they are easily removed and replaced.

3.12.2 Cleaning The 7535 G2

Important: ***Do not immerse the unit in water. Dampen a soft cloth with mild detergent to wipe the unit clean.***

To prevent damage to the touchscreen, use only the stylus (pen) supplied with your 7535 G2.

- Use ***only*** mild detergent or soapy water to clean the hand-held unit.

- Avoid abrasive cleaners, solvents or strong chemicals for cleaning. The 7535 G2 has a plastic case that is susceptible to harsh chemicals. The plastic is partially soluble in oils, mineral spirits and gasoline. The plastic slowly decomposes in strong alkaline solutions.
- To clean ink marks from the keypad and touchscreen, use isopropyl alcohol.

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4.1 Navigating In Windows CE And Applications

Note: *In order to access many of the menus discussed in this chapter, the security level must be set to 'Supervisor' (see* "Security Settings" on page 88*).*

Graphic user interfaces like Windows CE for portable devices and desktop Windows (2000, XP, etc.) utilize 'point and click' navigation. An equivalent keyboard shortcut is also available for every 'point and click' action.

Windows CE supports the same 'point and click' user interface and keyboard shortcuts as desktop Windows with one difference—the 'point and click' action is accomplished using a touchscreen rather than a mouse. Actions can be performed using any combination of keyboard shortcuts or touchscreen tapping.

4.1.1 Navigating Using A Touchscreen And Stylus

Note: *If the touchscreen is not registering your screen taps accurately, the touchscreen may need recalibration. Refer to* "Calibrating The Touchscreen" on page 60.

A touchscreen is an optional feature on 7535 G2s. A hand-held equipped with a touchscreen comes equipped with a *stylus*—a pointing tool that looks like a pen—stored in a slot at the top of the unit. The stylus is used to select objects on the touchscreen.

Note: *To prevent damage to the touchscreen, use only the stylus (pen) supplied with your 7535 G2.*

To choose an icon, open a file, launch an applet or open a folder:

- Double-tap the stylus on the appropriate icon.

4.1.2 Navigating Using The Keyboard

If your 7535 G2 has a standard screen (rather than a touchscreen), choosing icons and navigating dialog boxes, displaying the desktop, and so on requires keyed input. If your unit has already been fully configured and your application is launched at startup, you'll have little need for keyboard navigation, but you can refer to Table 4.1 on page 82 for a description of the navigation keys.

Operation	Key or Key Combination
Switch between active applications	[ALT] [TAB]
Open task manager	[ALT] [ESC]
Move the cursor	Arrow keys
Open file, folder or icon	[ENTER]
Exit & Save	[ENTER]
Close/Exit & Do Not Save	[ESC]
Navigate Dialog Boxes	[TAB] To move cursor up [SHIFT] [TAB] To display the contents of the next 'tab' in a dialog box [CTRL] [TAB]
Select Radio Button/Press Button	[SPACE]
Go to Start Menu	[BLUE][0]

Table 4.1 Keyboard Navigation

Keep in mind that unlike a desktop computer, the 7535 G2 does not support key chording (pressing two keys at the same time). You must press one key followed by the next in sequence. Refer to "Working With Files, Folders And Programs" for additional details about keyboard navigation.

4.2 Working With Files, Folders And Programs

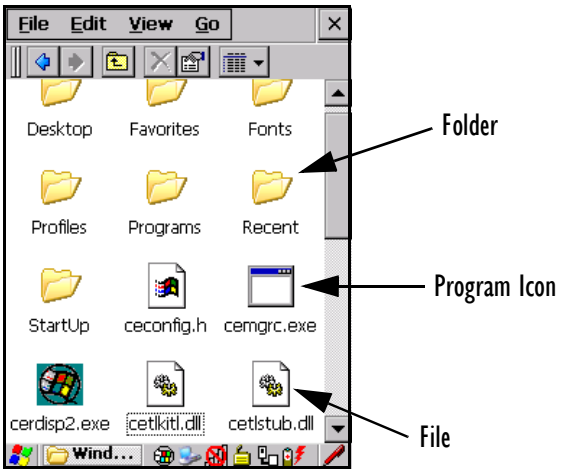

Figure 4.1 Working With Windows Icons

- Double-tap on the appropriate icon—either a folder icon, a program icon or a file icon—to open or launch your selection.

If you're using the keyboard:

- Use the arrow keys to highlight the icon you want to open or launch.
- Press [ENTER].

4.3 The Startup Desktop

When the 7535 G2 boots up, the startup desktop (shell) is displayed. Any applications stored in the Startup folder start up immediately.

Note: *The startup folder is located in \Windows\StartUp and \Flash Disk\StartUp.*

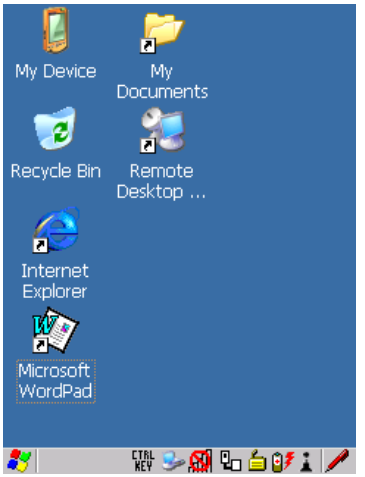

Figure 4.2 The 7535 G2 Startup Desktop

To access desktop icons:

- Double-tap on the icon to open a window or, in the case of an application icon, launch an application.

On the keyboard:

- Use the arrow keys to highlight the icon, and press [ENTER] to launch the highlighted icon.

Note: *If the arrow keys do not highlight the desktop icons, the desktop may not be selected. Press [BLUE] 0 (zero) to display the Start Menu, and select Desktop. Now the desktop will be "in focus" and the arrow keys will highlight the icons.*

4.3.1 The Desktop Icons

The icons displayed in the startup desktop operate in much the same way as those displayed on any standard PC desktop that is running Windows.

My Device

Choosing this icon displays the contents of your 7535 G2 computer. If you're not sure how to work with the files, folders and programs displayed, refer to "Working With Files, Folders And Programs" on page 82.

Recycle Bin

This option temporarily stores items that were deleted, allowing you to either permanently delete or restore these items.

Internet Explorer

Choosing this icon launches Internet Explorer—a standard Windows CE version. Keep in mind that your supervisor will need to set up access using the *Internet Options* and the *Network and Dial-up Connections* icons in the *Control Panel*.

Remote Desktop Connection

This option allows your 7535 G2 to communicate with a remote desktop PC. "Remote Connect" on page 103 provides a website with step-by-step instructions.

4.3.2 The Taskbar

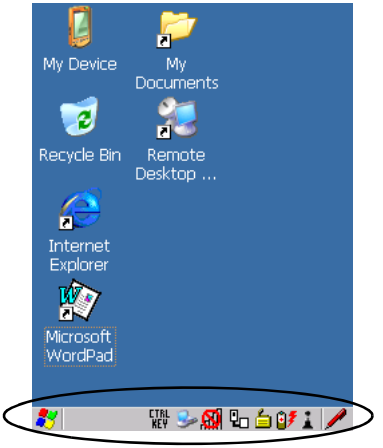

Figure 4.3 The Taskbar

The 7535 G2 is equipped with a taskbar at the bottom of the screen. It displays icons through which you can view the battery capacity and radio signal quality of your unit. If the hand-held is attached to a charger, cradle, docking station or PDM, an associated icon is displayed. In addition, the taskbar displays the application(s) currently running on your unit and the security level assigned to your 7535 G2.

The taskbar also displays active modifier keys: [SHIFT], [ALT], [CTRL], [BLUE] and [ORANGE]. Keys that have been locked "on" are displayed in *uppercase* letters. For example, if you have set the [CTRL] key Lock to "on" in the Keyboard menu and you press the key, it is displayed as CTRL KEY in the taskbar. (For detailed information on modifier keys and keyboard options, see "The Keyboard" on page 53).

4.3.2.1 Using The Taskbar

A *tooltip* is displayed as each taskbar icon is highlighted. The tooltip provides the status of each icon.

If you're using the touchscreen:

- Tap and hold the stylus on an icon to display the icon's tooltip. Double-tap the icon to open the *Control Panel* dialog box associated with the icon. For example, double-tap the battery icon to display a dialog box listing the current battery capacity information.

On the keyboard:

- Press [BLUE] [0] to display the *Start Menu*.
- Choose **Shortcuts** from the *Start Menu*, and then press the [RIGHT] arrow key to display the sub-menu.
- Choose **System Tray** in the sub-menu.
- Use the arrow keys to highlight the icon in the taskbar about which you'd like more information.
- Press [ENTER] to display the appropriate dialog box.

4.3.2.2 Customizing The Taskbar

To customize the taskbar so that it displays only those icons you require:

- In the *Start Menu*, choose **Settings**, and then **Taskbar**.

If you're using the keyboard:

- Press [BLUE] [0] (zero) to display the *Start Menu*.
- Highlight the **Settings** option, highlight **Taskbar** in the sub-menu, and press [ENTER].

The *Taskbar and Start Menu* dialog box is displayed.

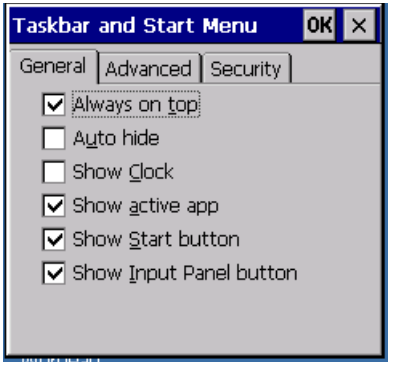

Figure 4.4 Taskbar And Start Menu Settings

- Tap the stylus on the items you want to activate or deactivate. The check mark indicates active items.

If you're using the keyboard:

- Highlight the options you want to activate, and press the [SPACE] key to select them. A check mark indicates active items.

4.4 The Start Menu

Note: *Some of the Start Menu items may be disabled based on the current 7535 G2 security settings.*

The *Start Menu* lists the operations you can access and work with. It is available from the startup desktop or from within any application.

To display the menu:

- Press [BLUE] [0] (zero).

Note: *Tap on the item in the menu with which you want to work.*

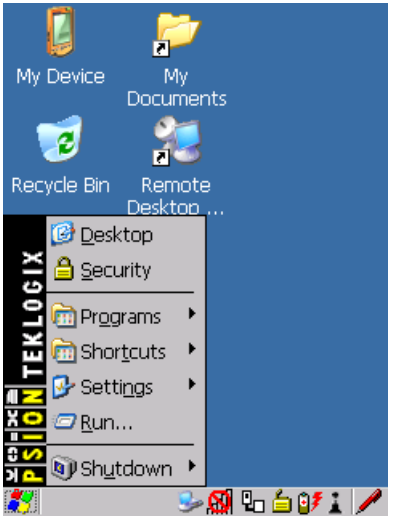

Figure 4.5 Start Menu

If you're using the keyboard:

- Use the arrow keys to highlight a menu item, and press [ENTER], ***or***

If the menu item has an underlined character:

- Type the underlined alpha character. For example, to display the *Security* dialog box, type the letter '**s**'.

4.4.1 The Desktop

Choosing the *Desktop* option from the *Start Menu* displays the 7535 G2 desktop.

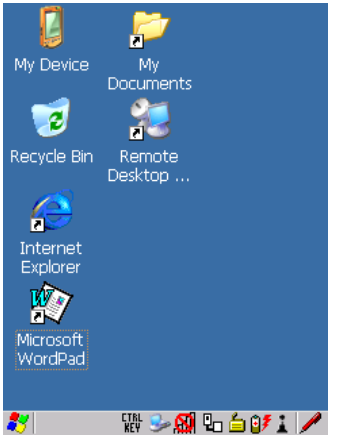

Figure 4.6 7535 G2 Desktop

4.4.2 Security Settings

Choosing the *Security* option from the *Start Menu* displays a dialog box in which you can define the access level for the 7535 G2: Supervisor or User.

Figure 4.7 Security Levels

Assigning The Supervisor Security Level

The security level is represented by an icon in the shape of a lock in the taskbar. The security levels define the options accessible to the operator in the *Start Menu* and the *taskbar*. By default, the security level is set to *User*, restricting access to only the most basic *Start Menu* items.

To allow access to all the *Start Menu* and *taskbar* options:

- In the *Security Level* dialog box, select the radio button next to Supervisor.
- In the *Password* field, type the Supervisor level password. The default password is 123456.
- Select **OK**. You can now access all menu items in the *Start Menu* along with the icons in the taskbar.

Changing A Password

Note: *Keep in mind that this is the same password as that assigned through the Password control panel applet. Refer to* "Control Panel Icons" on page 105.

To assign a password:

- Choose a **security level**, and enter the **existing password** in the *Password* field
- Select the Set Password button.

A dialog box labelled *Password Properties* is displayed.

- Type the new password in the *Password:* text box (all keyboard characters are valid).
- In the *Confirm Password:* text box, retype the new password.

Configuring Security

Choosing the *Configure* button displays the *Configure Security* dialog box.

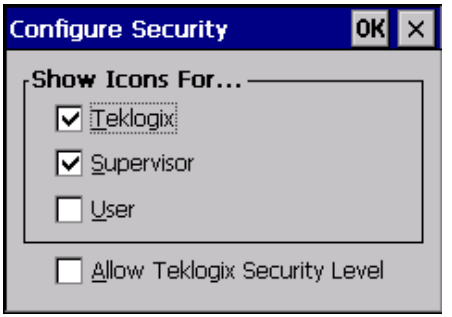

Figure 4.8 Configuring Security

This dialog box allows you to determine which security levels will have an associated icon displayed in the taskbar. By default, a security icon is not displayed for user-level security.

4.4.3 Programs

- Choose **Programs** to display a sub-menu of options.

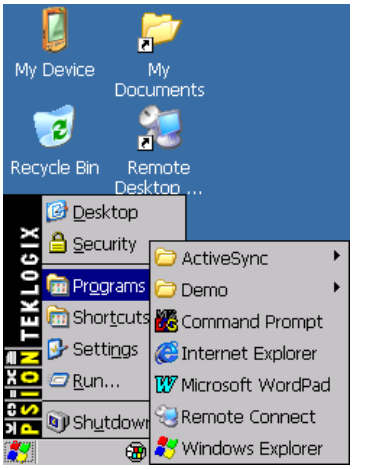

Figure 4.9 Program Sub-Menu

This sub-menu allows you to choose *ActiveSync* and *Command Prompt*, and you can access the *Internet Explorer*, installed applications (e.g., Microsoft WordPad), *Remote Connect* or *Windows Explorer*.

ActiveSync®

This option allows you to connect to another device using ActiveSync.

Demo

This folder contains the *Demo Imager*, *Demo Scanner*, and *Demo Signature* applications. *Demo Imager* is used for simple image-capturing purposes and for displaying bar code data and bar code statistics on the same screen with image data and information. *Demo Scanner* can be used to test how the hand-held reads and writes RFID tags. *Demo Signature* allows you to capture a signature written on the screen with your stylus and save it to a file.

Command Prompt

Command Prompt is used to access the DOS command prompt. At the prompt, you can type DOS commands such as *dir* to display all the directories in the drive.

Internet Explorer

The 7535 G2 is equipped with Microsoft Internet Explorer for Windows CE. You can access the *Internet Options* icon through the *Start Menu* under *Settings, Control Panel* or by double-tapping on the desktop icon *My Device* and then, double-tapping on the *Control Panel* icon.

Remote Connect

Remote Connect is a 7535 G2 application used to connect to a Windows Terminal Server so that you can run a "session" on the Server machine using the 7535 G2 (Windows CE device). "Remote Connect" on page 103 provides a website with details about this option.

Windows Explorer

The Windows Explorer installed on your 7535 G2 is consistent with all Windows CE devices. You can access this option from the *Start Menu* under *Programs, Windows Explorer.*

4.4.4 Shortcuts

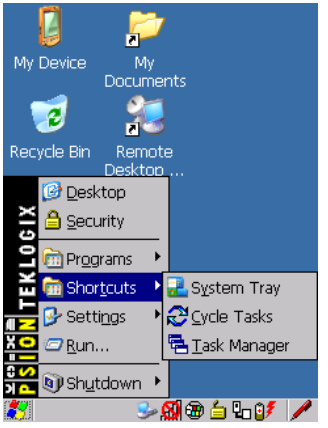

Figure 4.10 Shortcuts Sub-Menu

System Tray

If your touchscreen is not enabled, you can use the *System Tray* option to access the icons in the taskbar at the bottom of the screen. The taskbar displays indicators such as a radio signal icon and the security level. These indicators are attached to dialog

boxes that provide additional information.

- Choose **Shortcuts, System Tray**.

When *System Tray* is chosen, the taskbar icons become accessible. To display the dialog box attached to an icon:

- Use the arrow keys to highlight an icon, for example, the security icon.
- Press [ENTER] to display the security level dialog box.

Cycle Tasks

When *Cycle Tasks* is selected (and the Task Manager is not open), you can cycle through active applications.

To cycle through your active applications:

- Choose **Shortcuts, Cycle Tasks**, *or*

  Press [ALT] [TAB].

Task Manager

The *Task Manager* allows you to switch to another task or to end an active task. To display the task manager window:

- Tap on **Shortcuts, Task Manager**, *or*

  Press [ALT] [ESC].

Figure 4.11 Task Manager

4.4.5 Settings

The **Settings** sub-menu includes the following settings: *Control Panel*, *Network and Dial-up Connections* and *Taskbar and Start Menu*.

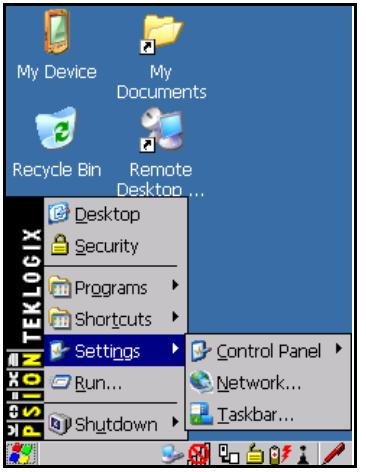

Figure 4.12 Settings Sub-Menu

Control Panel

The *Control Panel* contains applets used to configure hardware, the operating system and the shell. If your 7535 G2 is running with the Psion Teklogix TekTerm application or another application, additional configuration applets may appear in the *Control Panel*.

Network And Dial-Up Connections

The *Network and Dial-up Connections* window allows you to configure the 7535 G2 radio or execute an existing configuration. Refer to “Configuring Your Radio” on page 18 for radio setup details.

Taskbar And Start Menu

The *Taskbar and Start Menu* option displays a dialog box in which you can customize the taskbar, choosing which options will be displayed. Refer to “Customizing The Taskbar” on page 86 for additional details about this option.

4.4.6 Run

Choosing the *Run* option from the *Start Menu* displays a dialog box in which you can enter the name of the program, folder or document you want to open or launch.

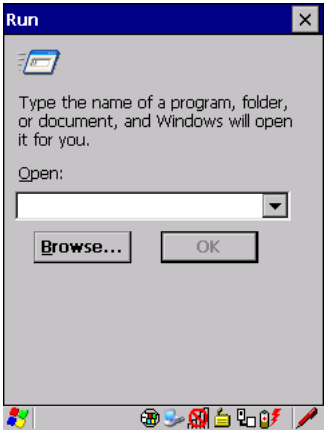

Figure 4.13 Run Dialog Box

4.4.7 Shutdown

The *Shutdown* menu includes these options: *Suspend, Warm Reset* and *Cold Reset*.

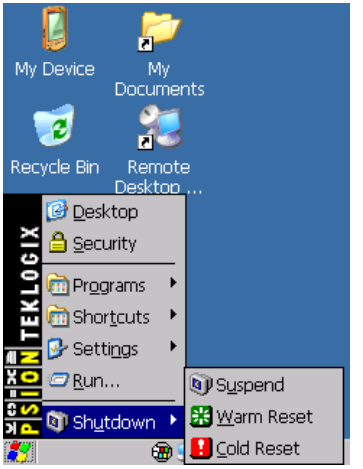

Figure 4.14 Shutdown Sub-Menu

Note: *This menu varies slightly depending on the security level chosen. When the 7535 G2 is set to* ***User level****, the Shutdown option is replaced by* ***Suspend****. A sub-menu is not available.*

Suspend

The *Suspend* option suspends the 7535 G2 immediately. This is equivalent to turning the hand-held off.

Warm Reset

The *Warm Reset* option resets the 7535 G2, leaving all saved files and (registry) settings intact. Any unsaved data is lost.

Cold Reset

The *Cold Reset* option resets the 7535 G2 (see page 45). Any files not stored in permanent memory are lost; however, the registry settings are saved.

4.5 Using A Dialog Box

A dialog box (like the samples in Figure 4.15) appears when you need to make selections and enter further information. You can move between dialog items by tapping on them with your stylus, or by pressing the arrow keys and the [TAB] key ([SHIFT] [TAB] moves the cursor backwards).

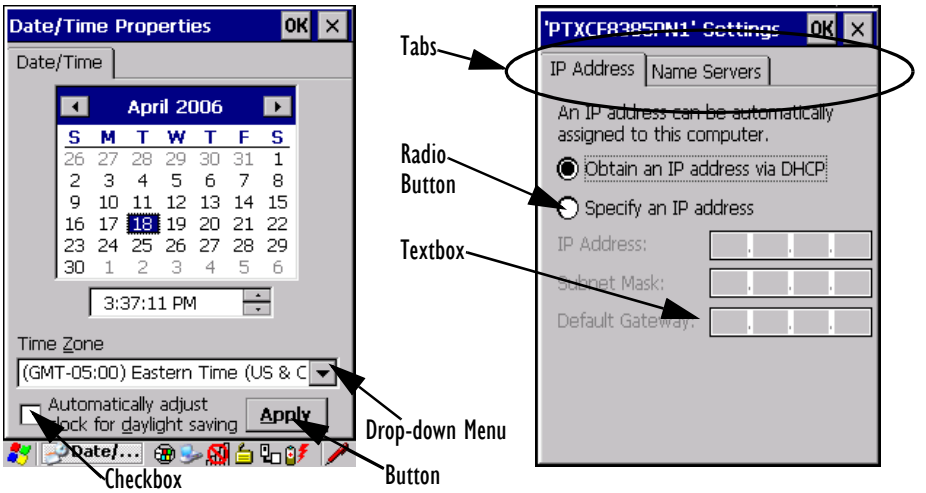

Figure 4.15 Dialog Boxes

Note: *You can use the stylus to tap on an element in a dialog box to select or deselect it, display drop-down menu items, save your selections, and so on.*

Dialog boxes contain one or more of the following elements:

Tab: A tab separates different elements of a dialog box. Press the [TAB] key until a tab in the dialog box is highlighted. To display adjoining tabs, press the [RIGHT] or [LEFT] arrow key. To display the information in the next tab from anywhere in the window, press [CTRL] [TAB].

Textbox: A textbox requires that you type information. Press the [TAB] key to highlight the textbox and then type the appropriate information.

Drop-down: This type of menu is identified by up and down arrows next to the drop-down menu to indicate that additional options are available. Press the [TAB] key to highlight the menu, and use the arrow keys on your keyboard to cycle through the options.

Checkbox: This box allows you to select or deselect an option. To select or deselect a checkbox, press the [TAB] key to highlight the checkbox, and press the [SPACE] key to select or deselect it.

Radio buttons: These buttons allow you to choose from a number of options. For example, in the sample screen in Figure 4.15 on page 95 you can choose to *Obtain an IP address via DHCP* or *Specify an IP address*. Press the [TAB] key to highlight a radio button option, and then select a radio button by pressing the arrow keys to highlight the appropriate option.

Buttons: This type of button allows you to *Save*, *Delete* and so on the options you've chosen in a dialog box. Use the [TAB] key to highlight the button you want to use. Press the [ENTER] key to activate it.

Saving Your Choices: Once you've made all your changes, press the [ENTER] key to save your changes and exit the window.

Note: *A dialog box item that is displayed in grey text indicates that it is not currently available.*

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5.1 Remote Connect

Remote Connect is a 7535 G2 application used to connect to a Windows Terminal Server so that you can run a "session" on the Server machine, using the 7535 G2 (Windows CE device).

Refer to the following website for step-by-step information about setting up this connection:

http://www.microsoft.com/WindowsXP/pro/using/howto/gomobile/remotedesktop/default.asp,

or contact Psion Teklogix support services (see Appendix A: "Support Services And Worldwide Offices").

5.2 The TekTerm Application

TekTerm is a powerful emulation application ideally suited for real time data transaction applications associated with mainframes and servers. The 7535 G2 includes unique features that support TekTerm—a Psion Teklogix application that has the ability to maintain multiple simultaneous sessions with a variety of host computers. For detailed information, please refer to the *TekTerm Software User Manual, P/N 8000073*.

5.3 Pocket PC Compatibility

The 7535 G2 supports the AYGShell API set that allows Pocket PC-compatible applications to run on the hand-held. Windows CE includes application programming interface (API) compatibility support for the Microsoft Windows Powered Pocket PC 2002 shell in units running Windows CE.

The website listed below describes the APIs exposed through AYGShell and the application compatibility between Windows Powered Pocket PC 2002-based applications and Windows CE-based devices:

http://msdn.microsoft.com/library/default.asp?url=/library/en-us/dncenet/html/WINCENET_CEPCC_App.asp

5.4 The Control Panel

The Windows CE *Control Panel* provides a group of icons through which you can set a variety of system-wide properties, such as mouse sensitivity, network configuration and the desktop color scheme.

Note: *If you are uncertain how to move around a dialog box and make selections, review* "Using A Dialog Box" on page 95.

When the 7535 G2 boots up, the startup desktop (shell) is displayed, and any applications stored in the Startup folder start up immediately.

To access the *Control Panel*:

- Press [BLUE] [0] to display the *Start Menu*.
- Use the stylus to tap on **Settings**>**Control Panel**.

If you're using the keyboard:

- Press [BLUE] [0] to display the *Start Menu*.
- Highlight **Settings** in *Start Menu*, and press the [RIGHT] arrow key to highlight the **Control Panel**.
- Press the [ENTER] key.

The *Control Panel* folder contains icons used in the setup of your 7535 G2.

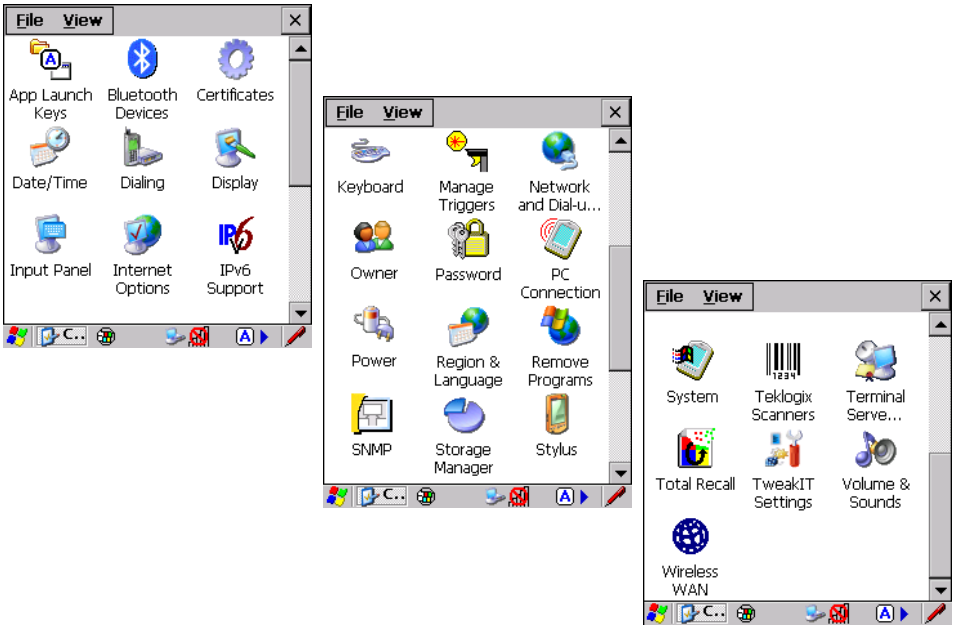

Figure 5.1 Control Panel

5.5 Control Panel Icons

The *Control Panel* provides a group of icons that allow you to customize and adjust settings on your 7535 G2.

App Launch Keys

By mapping keys to applications using this program, you can then launch those applications from a single key-press.

Bluetooth Devices

Provides options for *Bluetooth* radio setup. It also provides the capability to use a *Bluetooth*-enabled cellular phone as a data modem to exchange information with other *Bluetooth* devices and provide network access.

Certificates

A public key is transmitted as part of a certificate. The certificate assigned through this icon is used to ensure that the submitted public key is, in fact, the public key that belongs to the submitter. The client checks that the certificate has been digitally signed by a certification authority that the client explicitly trusts. “Certificate Assignment” on page 135 directs you to the appropriate setup information.

Date/Time

Allows you to set the current Month, Date, Time and Time Zone on your unit.

Dialing

Specifies dialing settings, including area code, country code, dial type and the code to disable call waiting. You can store multiple patterns—for example, ‘Work’, ‘Home’, and so on using this dialog box.

Display

Changes the appearance (window colour scheme) on the unit desktop.

Input Panel

Provides the framework for a Soft Input Panel (SIP) should you need to design your own SIP, or change some soft keyboard options.

Internet Options

Provides options to configure your Internet browser. You can determine items such as the default and search page that the browser applies when connecting to the Internet, the cache size, the Internet connection options, and the security level that is applied when browsing.

IPv6 Support

Refers to a new Internet Protocol specification (version 6) that has been published to use 128-bit IP addresses (replacing version 4).

Keyboard

Toggles character repeat on and off and specifies delay and rate for repeated characters. It also allows you to adjust the keyboard backlight threshold and intensity.

Manage Triggers

Allows multiple-scanner trigger management, including the ability to configure each of the trigger buttons. You can configure the trigger ID for each trigger button for both single- and double-click, and the double-click time.

Network And Dial-up Connections

Displays a network window from which the 7535 G2 802.11g radio can be configured and an existing configuration can be executed. Refer to “Configuring Your Radio” on page 18 for details.

Owner

Provides fields in which you can specify owner information. A *Notes* tab allows additional information to be entered and displayed when the unit is powered up. *Network ID* tab information is used to access network resources. (This information should be provided by your System Administrator.)

Password

Allows you to assign a password to restrict access to elements of the unit. Once assigned, password access cannot be circumvented so it is important that you write down your password and keep it in a safe place. Refer to “Security Settings” on page 88 for details.

PC Connection

Enables direct connections to a desktop computer. Selecting the **Change Connection** button allows you to change the type of direct connect to your PC.

Power

Displays battery pack power status. (Alternately, battery status can be accessed through the taskbar.) Additional tabs allow you to determine suspend states, specify a suspend threshold and, when seated in either the Combo Dock or Quad Dock, determine whether or not a battery that requires it can be recalibrated. This dialog box also allows you to activate card slots. (Refer to “Devices” on page 128 for details.)

Region & Language

Allows you to specify the local language that is to be displayed on the hand-held screen along with the format of numbers, currency, time and date for your region.

Remove Programs

Lists the programs that can be removed from your unit. To remove a program, select it and then click on the **Remove** button.

SNMP

SNMP (Simple Network Management Protocol) is the protocol used to monitor and manage devices attached to a TCP/IP network.

Storage Manager

Allows the user to view information about the storage devices that are present, such as SD-MMC flash cards. For details, see page 156.

Stylus

Adjusts how Windows CE recognizes your double-tap (as slow or rapid successive taps). In the *Calibration* tab, you can recalibrate your touch-screen by tapping on the **Recalibrate** button and following the directions on the screen.

System

Displays system and memory properties. In the *Memory* tab, you can allocate memory between storage memory and program memory.

Teklogix Scanners

Provides scanner parameters and the bar code symbologies that the 7535 G2 scanner will successfully read.

Terminal Server Client Licenses

The Terminal Services Client Access License (TS CAL) application displays TS CAL 'tokens' for devices that connect to a Terminal Server.

The Terminal Services license server stores all TS CAL license tokens that have been installed for a group of terminal servers, and tracks licenses issued. When a client device first connects to the Terminal Server, the server uses a discovery process to locate the license servers. There can be multiple license servers for one Terminal Server. The Terminal Server stores information about the license servers it discovered in the registry.

The license server responds with a temporary token for the device. A grace period begins that allows the device to connect to the server without a permanent license. This grace period allows the administrator to purchase the license. The next time the client tries to connect to the server, the license server issues a permanent CAL if one is available. If one is not available, the client continues to use the temporary CAL.

Total Recall

Provides access to a backup and restore utility to maintain applications and settings over cold reboots.

TweakIT Settings

Allows you to change Advanced System Settings (interface, network, and servers), User System Settings (display font size), and provides the Registry Editor.

Volume & Sounds

Allows you to adjust the volume of the sound emitted to indicate events like warnings, key clicks and screen taps.

Wireless WAN

Provides access to technology like GSM/GPRS, which allows wide area networking capability such as internet browsing via GSM/GPRS. For detailed information, see Appendix D: “Wireless WAN”.

5.6 Basic Setup

5.6.1 Display Properties

- In the *Control Panel*, choose the **Display** icon.

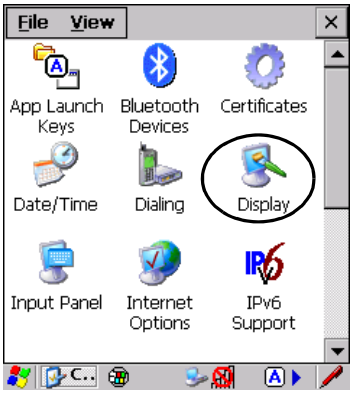

Figure 5.2 Choosing The Display Icon

5.6.1.1 Display Contrast

The *Contrast* tab allows you to adjust the display contrast to suit the environment in which you are using the 7535 G2. The contrast control can also be used to reduce display flickering that can occur with colour displays in certain lighting conditions.

- In the *Display Properties* dialog box, open the **Contrast** tab.

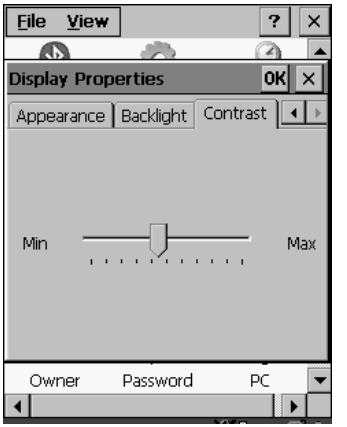

Figure 5.3 Display Contrast Properties

- Slide the bar in the *Contrast* tab to the *left* to decrease or darken the display contrast.
- Slide the bar to the *right* to increase or *lighten* the display contrast.

5.6.1.2 Display Backlight

The backlight is activated for a configurable amount of time if the ambient light is below a specified threshold and if the 7535 G2 is in use (key press, scanner trigger). The **Display Properties** dialog box in the *Control Panel* allows you to specify the intensity of the backlight along with how the backlight behaves in low-light conditions and when the unit is not in use.

Note: *Keep in mind that this option may be restricted to supervisory use only.*

- In the *Display Properties* dialog box, open the **Backlight** tab.

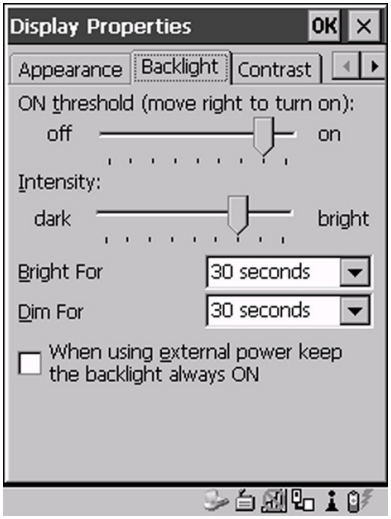

Figure 5.4 Display Backlight Properties

Notes: *Backlight changes take effect immediately. You do not need to reset the unit.*

To maximize battery run time, keep the display backlight brightness and active durations as low as possible.

ON Threshold

The 7535 G2 is equipped with an ambient light sensor. This sliding bar allows you to determine how dark the ambient light needs to be before the backlight turns on.

Intensity

This parameter is used to adjust the light intensity of the 7535 G2 backlight. Sliding the bar to the left lowers the light intensity, and sliding it to the right raises the intensity.

Bright For

The value chosen from this drop-down menu determines the duration of time that the backlight stays on at the configured intensity after the last user action (keypress, scan trigger).

Dim For

The value chosen from this drop-down menu determines the duration of time that the backlight stays on at half the configured intensity (dimmed backlight) after

expiration of the *Bright For* delay and as long as no user action takes place (such as a keypress or scan trigger). At the expiration of the *Dim For* duration, the display backlight shuts off.

External Power Checkbox

When you select the checkbox next to **When using external power keep the backlight always ON**, the backlight remains **ON** at the configured intensity when the 7535 G2 is operating with external power (not battery power). If the 7535 G2 is drawing power from its battery, this option is ignored and the other parameters defined in *Display Properties* dialog box take affect.

5.6.1.3 Display Appearance

- In the *Display Properties* dialog box, open the **Appearance** tab.

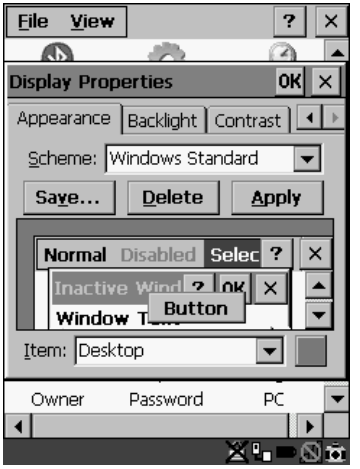

Figure 5.5 Display Appearance Properties

This dialog box allows you to customize the display colour scheme.

5.6.2 Keyboard Properties

This icon displays the *Keyboard Properties* dialog box in which you can adjust the repeat rate of the keys, the intensity of the keyboard backlight and the behaviour of the [BLUE] and [ORANGE] modifier keys. This dialog box also allows you to define macro keys and Unicode characters.

- In the *Control Panel*, choose the **Keyboard** icon.

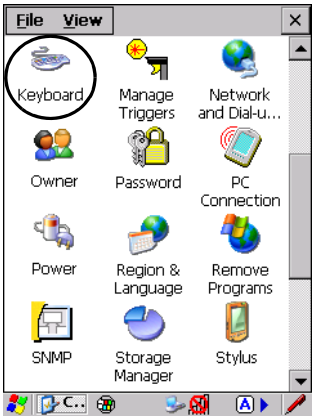

Figure 5.6 Choosing The Keyboard Icon

5.6.2.1 Key Repeat

Note: *These settings apply when a key is held down continuously.*

- In the *Keyboard Properties* dialog box, open the **Repeat** tab.

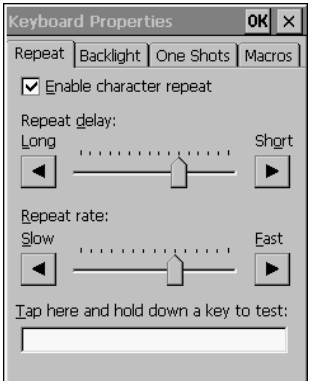

Figure 5.7 Key Repeat Properties

Repeat Delay

The value assigned for this parameter determines the delay in milliseconds between repeat characters. Sliding the *Repeat Delay* bar to the left increases the delay between key repeats, and sliding the bar to the right shortens the repeat delay time.

Repeat Rate

The value assigned for the *Repeat Rate* parameter determines how quickly the key you press repeats and is measured in characters per second (cps). Sliding the bar to the left slows the repeat rate, and sliding the bar to the right increases the repeat rate.

Note: *Use the field at the bottom of this dialog box to test the repeat delay and rate settings you've chosen.*

5.6.2.2 Keyboard Backlight

- In the *Keyboard Properties* dialog box, open the **Backlight** tab.

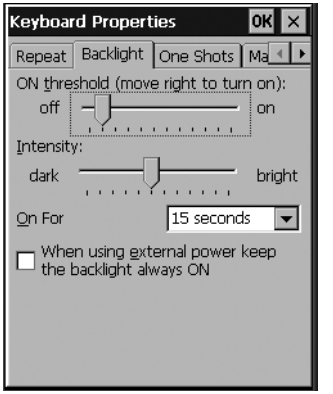

Figure 5.8 Keyboard Backlight Properties

ON Threshold

The *ON Threshold* sliding bar allows you to determine how dark the ambient light needs to be before the keyboard backlight turns on.

Intensity

This parameter is used to adjust the light intensity of the 7535 G2 keyboard backlight. Sliding the bar to the left darkens the keyboard backlight intensity, and sliding it to the right lightens the intensity.

Note: *The keypad backlight maximum brightness will decrease over time as it ages. Use mid-range intensity settings when possible to extend the back-*

light lifespan. When the backlight starts to dim, use this parameter to make it brighter.

ON Time

The value chosen from this drop-down menu determines the duration of time that the keyboard backlight stays on after the last user action (keypress or scan trigger).

5.6.2.3 Keyboard One Shot Modes

- In the *Keyboard Properties* dialog box, open the **One Shots** tab.

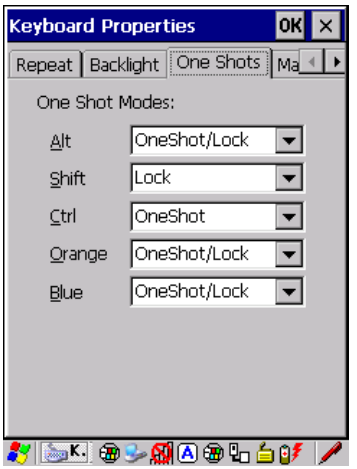

Figure 5.9 Keyboard One Shot Properties

The options in this tab allow you to determine how modifier keys on your 7535 G2 behave. For each modifier key—[ALT], [SHIFT], [CTRL], [ORANGE] and [BLUE]—you have the following options in the drop-down menu: Lock, OneShot, and OneShot/Lock.

Note: *Keep in mind that checking the taskbar lets you know whether or not these keys are locked on. For example, if the [ORANGE] key is locked 'on', the taskbar at the bottom of the screen displays it in* ***uppercase*** *characters,* ORANGE KEY. *If this key is displayed in* ***lowercase*** *characters in the taskbar, you'll know that the* orange key *is* ***not*** *locked. It will become inactive following a key press.*

Important: ***Once you've assigned a One Shot mode to a modifier key, you need to tap on the OK button at the top of the tab to activate your selection.***

Lock

If you choose *Lock* from the drop-down menu, pressing a modifier key ***once*** locks it 'on' until you press the modifier key a second time to unlock or turn it off.

OneShot

If you choose *OneShot*, the modifier key remains active only until the next key is pressed.

OneShot/Lock

OneShot/Lock allows you to combine these functions. When you choose this option and you *press the modifier key* ***once***, it remains active only until the next key is pressed.

If you *press the modifier key* ***twice***, it is locked 'on', remaining active until the modifier key is pressed a third time to turn it 'off'.

5.6.2.4 Keyboard Macro Keys

- In the *Keyboard Properties* dialog box, open the **Macros** tab.

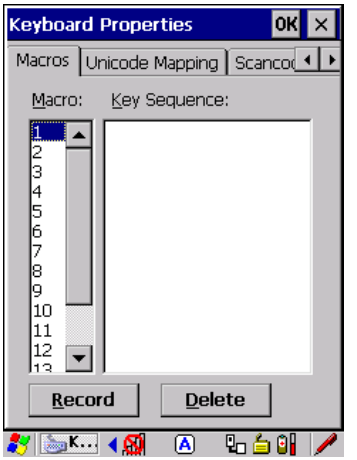

Figure 5.10 Macro Dialog Box

A macro has 200 programmable characters (or "positions"). The macro keys can be programmed to replace frequently used keystrokes, along with the function of executable keys including [ENTER], [BKSP] and [DEL] ([BLUE]-[BKSP]), function keys and arrow keys.

Recording And Saving A Macro

You can program up to 12 macro keys on a *58-key* 7535 G2. On a *36-key* 7535 G2, you can program a maximum of 6 macro keys.

- In the *Macro* menu highlight a macro key number, for example macro 1, to assign a macro to macro key [M1]. Choose the **Record** button.

A message screen is displayed instructing you to *Enter Key Strokes to Record*

Figure 5.11 Recording A Macro

- Type the macro sequence you want to assign to the Macro key. You can type text and numbers, and you can program the function of special keys into a macro.
- When you've finished recording your macro sequence, press the key sequence: [CTRL] [ALT] [ENTER], or choose the **Stop Recording** button.

A new screen called 'Verify Macro' displays the macro sequence you created. The *Save* button is highlighted.

- Press [ENTER] to save your macro, or highlight **CANCEL** and press [ENTER] to discard it.

Executing A Macro

To execute a macro:

- Press the macro key to which you've assigned the macro. For example, if you created a macro for *macro key 1*, press [M1] to execute the macro.

Deleting A Macro

To delete a macro:

- In the *Macros* tab, highlight the **macro number** you want to delete.
- Choose the **Delete** button.

5.6.2.5 Unicode Mapping

- In the *Keyboard Properties* dialog box, open the **Unicode Mapping** tab.

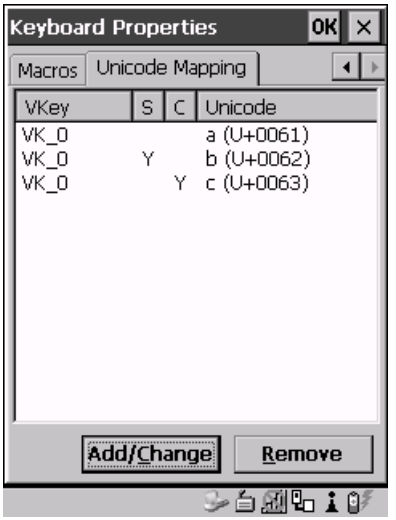

Figure 5.12 Unicode Mapping

The *Unicode Mapping* tab is used to map combinations of virtual key values and [CTRL] and [SHIFT] states to Unicode™ values. This tab shows the configured Unicode character along with the Unicode value. For example, the sample screen above shows "a (U+0061)" indicating that the character "a" is represented by the Unicode value "0061", and so on. Keep in mind that Unicode configurations are represented as hexadecimal rather than decimal values.

All user-defined Unicode mappings are listed in the *Unicode Mapping* tab in order of virtual key value, and then by order of the shift state. If a Unicode mapping is not listed, the Unicode mapping is mapped to the default Unicode value.

Adding And Changing Unicode Values

Important: ***Changes to Unicode mappings are not saved until you exit the Keyboard Properties dialog box.***

- Choose the **Add/Change** button.

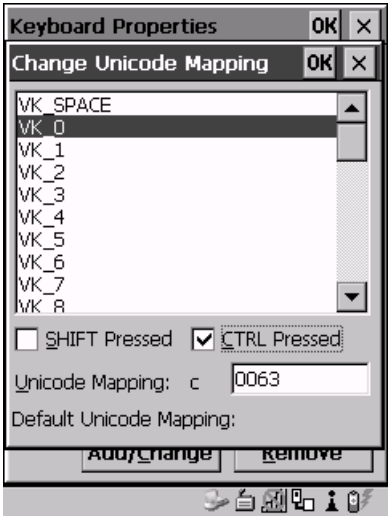

Figure 5.13 Adding And Change Unicode Values

- Highlight a value in the Unicode mapping list. In the sample screen above, a value will be assigned to virtual key 0 (VK 0).
- Position the cursor in the *Unicode Mapping* field, and type a **Unicode value** for the highlighted key.

Note: *To add a shifted state, [SHIFT] and/or [CTRL], press [TAB] to position the cursor in the checkbox next to 'SHIFT Pressed' and/or 'CTRL Pressed'. Press [SPACE] to select the shift state you want to assign.*

Removing Unicode Values

- In the *Unicode Mapping* tab, highlight the item you want to delete, and choose the **Remove** button.

5.6.2.6 Scancode Remapping

A scancode is a number that is associated with a physical key on a keyboard. Every key has a unique scancode that is mapped to a virtual key, a function or a macro. *Scancode Remapping* allows you to change the functionality of any key on the keyboard. A key can be remapped to send a virtual key (e.g. VK_F represents the 'F' key; VK_RETURN represents the [ENTER/ON] key, etc.), perform a function (e.g. turn the scanner on, change volume/contrast, etc.) or run a macro.

There are three different tables of scancode mappings: the *Normal* table, the Blue table and the Orange table. The Normal table defines unmodified key presses; the *Blue* table defines key presses that occur when the [BLUE] modifier is on; the *Orange* table defines key presses that occur when the [ORANGE] modifier is on. The default mappings of these scancodes can be overwritten for each of these three tables using the *Scancode Remapping* tab accessed from the *Keyboard Properties* dialog box.

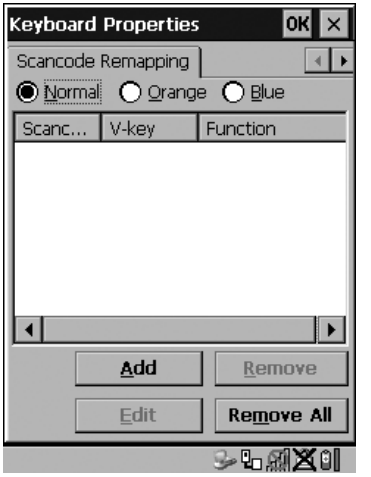

Figure 5.14 Scancode Remapping

The first column in the *Scancode Remapping* tab displays the scancodes in hexadecimal. If the scancode is remapped to a virtual key, that virtual key is displayed in the next column labelled 'V-Key'. A virtual key that is 'Shifted' or 'Unshifted' is displayed in the third column labelled 'Function'.

If the scancode is remapped to a function or a macro, the first and second columns remain blank while the third column contains the function name or macro key number (e.g., Macro 2).

Adding A Remap

To add a new remapping:

- Choose the **Add** button at the bottom of the dialog box.

The *Remap Scancode* dialog box is displayed.

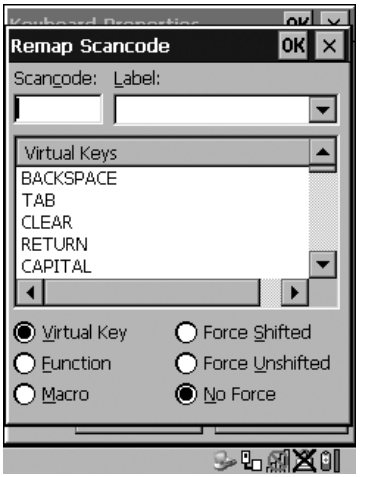

Figure 5.15 Remapping A Key

- Type the scan code in hexadecimal in the field labelled *Scancode*

Note: *The Label field displays the default function of the scancode you are remapping.*

Virtual Key, Function And Macro

The radio buttons at the bottom of the dialog box allow you to define to what the scan code will be remapped: Virtual Key, Function or Macro.

When *Virtual Key* is selected, you can choose to force [SHIFT] to be *on* or *off* when the virtual key is sent. If *No Force* is selected, the shift state is dependent on whether the shift state is on or off at the time the virtual key is sent.

When *Function* is selected, a list of valid functions appears in the dialog box.

When *Macro* is selected, the macro keys available on your unit are listed in the dialog box.

- Choose **Virtual Key**, **Function** or **Macro**.
- Choose a function from the *Function* list in the dialog box, and tap on **OK**.

Editing A Scancode Remap

To edit a scancode:

- In the *Scancode Remapping* tab, tap the stylus on the remap you want to edit.
- Tap on the **Edit** button, and make the appropriate changes.
- Tap on **OK** to save your changes.

Removing A Remap

To delete a remap:

- In the *Scancode Remapping* tab, highlight the scancode you want to delete, and tap on the **Remove** button.
- Tap on **OK**.

5.6.3 Volume And Sound Properties

- In the *Control Panel*, choose the **Volume & Sounds** icon.

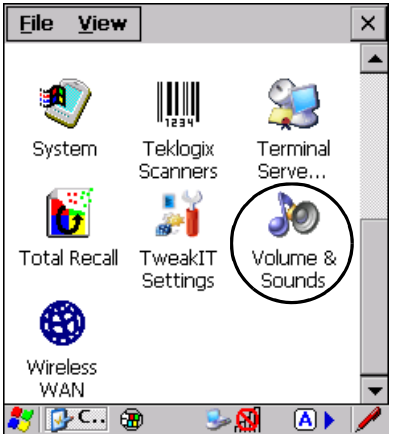

Figure 5.16 Choosing The Volume Icon

5.6.3.1 Volume Adjustments

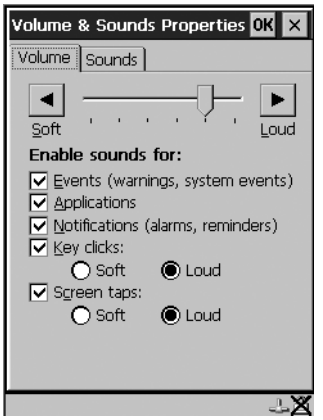

Figure 5.17 Volume Settings

- Slide the volume button to the left to lower the beeper volume or to the right to increase the beeper volume.
- Under the heading *Enable sounds for*, enable the conditions under which you want the 7535 G2 to emit a beep.

5.6.3.2 Sound Tab

The 7535 G2 computer is equipped with a beeper rather than a sound port. The options under this tab are not available for this hand-held.

5.6.4 Power Management Properties

This icon displays a *Power Properties* dialog box that indicates the unit's battery capacity and allows you to manage battery use.

- In the *Control Panel*, choose the **Power** icon.

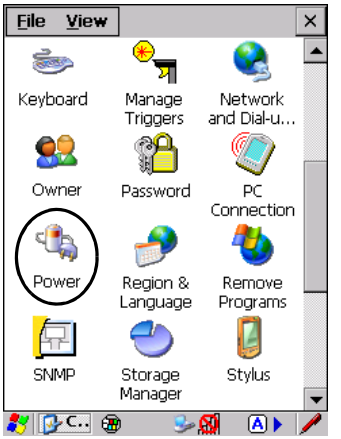

Figure 5.18 Choosing The Power Icon

5.6.4.1 Battery Capacity

- In the *Power Properties* dialog box, open the **Battery** tab to view battery details.

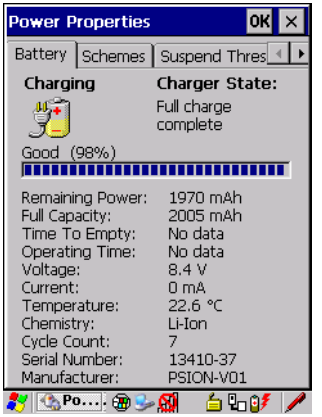

Figure 5.19 Power Battery Properties

5.6.4.2 Power Saving Schemes

- In the *Power Properties* dialog box, open the **Schemes** tab.

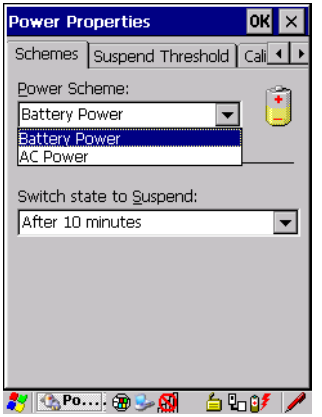

Figure 5.20 Power Scheme Properties — AC Power And Battery Power

Power Scheme

This drop-down menu allows you to specify whether the unit is using *AC Power* or *Battery Power*.

Switch State To Suspend

Important: ***Psion Teklogix recommends setting the Suspend value to 10 minutes. Setting 'Switch State To Suspend' to 'Never' will adversely affect the battery run time.***

To further reduce power consumption, carefully consider the duration of time that the display backlight is 'on' (see "Display Backlight" on page 110***).***

When the 7535 G2 is idle—not receiving any user input (a key touch, a scan, and so on) or system activity (serial data, an activity initiated by an application, and so on)—the hand-held uses the value assigned in the *Switch State To Suspend* field to determine when the unit will go to sleep (appear to be off).

When the time in the *Suspend* field elapses without any activity, the unit enters *suspend* state. In suspend state, the 7535 G2 CPU enters a *sleep* state, and the radio is shut off. The state of the device (RAM contents) is preserved. Pressing [ENTER] wakes the system from suspend state. When the 7535 G2 is in suspend state, the network connection will not be broken immediately. If the connection is dropped, you must re-establish the network connection.

5.6.4.3 Suspend Threshold

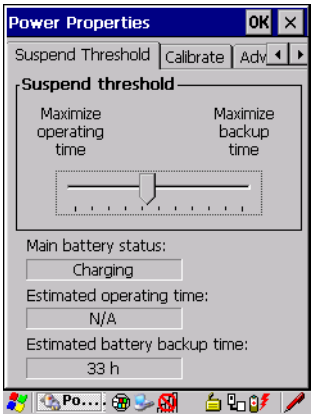

Figure 5.21 Suspend Threshold Tab

The *Suspend Threshold* adjustment tells the system when to shut down when the battery drains. If you choose *Maximum Operating Time*, the unit will run until the battery is completely empty; the RAM is only backed up for a short period of time. If you choose *Maximum Backup Time*, the hand-held shuts off with more energy left in the battery so RAM can be backed up for a longer period of time.

Important: ***Selecting* Maximum backup time *will reserve approximately 20% of the battery capacity for memory backup. Once the battery is drained, the system RAM memory is lost and the unit must cold boot.***

In most real-time transaction environments this is not a problem (it only takes a few seconds to cold boot). Batch transaction environments, where data is not saved to a non-volatile memory (such as an SD FLASH card), may need to pay particular attention to this parameter. Psion Teklogix does not recommend the storage of any valuable data in system RAM.

The 7535 G2 normal Windows CE environment does not store any critical data in RAM (such as the registry or file system).

If the user's application does not save data to RAM, Psion Teklogix recommends keeping the* Suspend Threshold *setting as low as possible to maximize battery run time.

5.6.4.4 Calibrate

Power Properties
OK
Calibrate
Advanced
Devices
Allow battery calibration
In order to maintain an accurate battery gauge, the system must occasionally fully discharge the battery. This will only occur when the unit is in a Combo Dock and the Allow Battery Calibration check box is checked. To prevent battery calibration cycles, uncheck this setting.

Figure 5.22 Charger Tab

Tapping in the checkbox next to *Allow Battery Calibration* allows the battery to be recalibrated only when necessary if the unit is inserted in a Combo Docking station.

5.6.4.5 Advanced

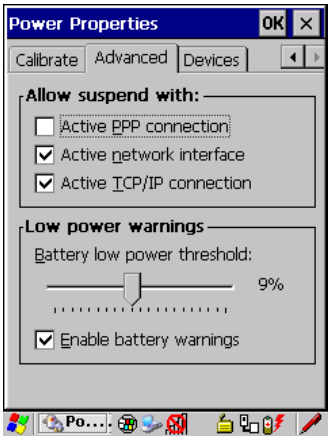

Figure 5.23 Card Slot Activation

Allow Suspend With:

This tab allows you to specify whether or not your unit will enter *Suspend* state while it is operating with an active PPP connection, network interface, or active TCP/IP connection.

Low Power Warnings

The sliding scale at the bottom of this tab allows you to specify the remaining battery capacity at which a warning message is displayed on the 7535 G2 screen, from 0% to 20%.

5.6.4.6 Devices

This tab controls power to individual CF and SDIO slots, and built-in devices. Enable or disable the checkboxes as needed, then tap on **OK** to save your changes.

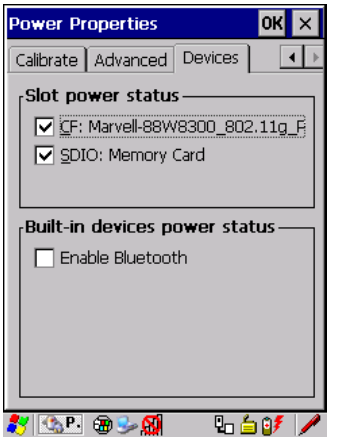

Figure 5.24 Card Slot Activation

5.6.5 Stylus Properties

Note: *Touchscreen calibration may not be enabled on your unit. If your screen appears to require recalibration, contact your supervisor.*

- In the *Control Panel*, choose the **Stylus** icon.

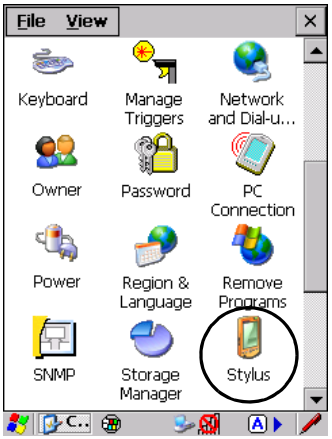

Figure 5.25 Stylus Icon

5.6.5.1 Double-Tap

- In the *Double-Tap* tab, follow the directions to tailor the sensitivity of the stylus when you tap on the touchscreen.

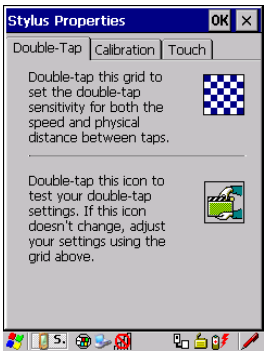
Stylus Properties
OK
Double-Tap
Calibration
Touch
Double-tap this grid to set the double-tap sensitivity for both the speed and physical distance between taps.
Double-tap this icon to test your double-tap settings. If this icon doesn't change, adjust your settings using the grid above.

Figure 5.26 Setting Stylus Sensitivity

5.6.5.2 Calibration

Touchscreens rarely require recalibration. However, if your touchscreen has never been calibrated or if you find that the stylus pointer is not accurate when you tap on an item, follow the directions below.

- Choose the *Calibration* tab, and then tap on the **Recalibrate** button.

Figure 5.27 Calibrating The Touchscreen

- Follow the directions in the *Calibration* tab to recalibrate the screen.

5.6.5.3 Touch

This tab allows you to disable the touchscreen.

- Choose the **Touch** tab. Select the checkbox next to *Disable the touch panel*.

5.6.6 Manage Triggers

Allows users to configure how bar code scanners and other devices such as RFID readers are triggered. You can configure the trigger ID for each trigger button for both single- and double-click, and the double-click time.

- In the *Control Panel*, choose the **Manage Triggers** icon (see Figure 5.28 on page 131).

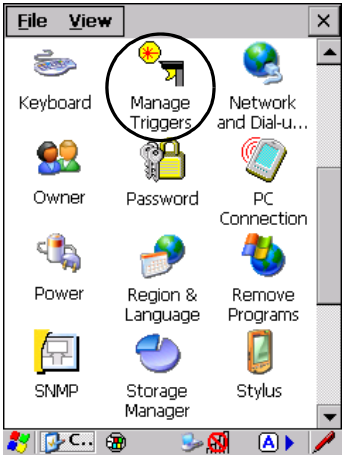

Figure 5.28 Manage Triggers Icon

- In the *Manage Triggers* screen you'll see a list of trigger mappings.

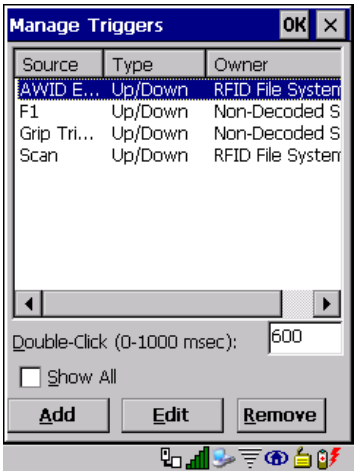

Figure 5.29 Manage Triggers Main Screen

5.6.6.1 Trigger Mappings

A trigger mapping is an association between a particular key on the keyboard and a driver or application, the "owner(s)" of the trigger source. When the specified key is pressed, the owner (for example, a decoded scanner) is sent a message.

Important: ***It is not possible to have two or more identical mappings—for example [F1] cannot be mapped to the Non-Decoded Scanner twice—even if the trigger type is different.***

A keyboard key that is used as a trigger source will no longer generate key data, or perform its normal function. For example, if the space button is used as a trigger source, it will not be able to send space characters to applications.

Double-Click

When a key is pressed and released, then pressed again within the configured time (between **0** to **1000** milliseconds), a double-click occurs. See also "Trigger Type" on page 134.

Show All

By default, the trigger mapping list only shows active mappings. Mappings for drivers or applications that are not currently active are not normally displayed. By checking this checkbox, all mappings, both active and inactive, are displayed.

Add

Tapping this button brings up the *Add* mapping dialog (see page 133), so that you can add new trigger mappings.

Edit

Tapping this button brings up the *Edit* mapping dialog (see page 133), so that you can edit existing trigger mappings.

Remove

Tapping this button removes an existing mapping.

OK

The *OK* button in the top right of the *Manage Triggers* screen saves all changes made. If the cancel button **X** is tapped instead, or the **[ESC]** key is pressed, all changes made will be discarded.

5.6.6.2 Add And Edit Trigger Mapping

These dialogs allow the user to add and edit trigger mappings.

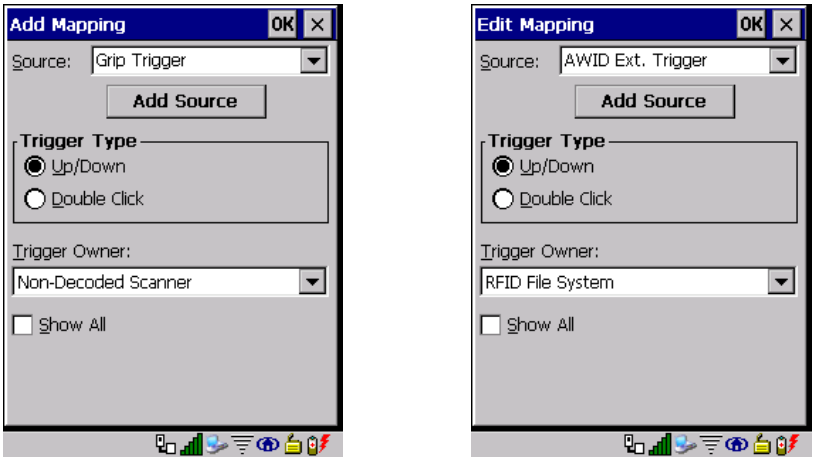

Figure 5.30 Add And Edit Trigger Mapping Menus

Source

This drop-down list allows you to specify the source of the trigger events, such as a keyboard key [F1], the grip trigger, etc., for the *Trigger Owner* selected.

Notes: *It is possible to map the same source to different owners—for example, [F1] can be mapped to both the Imager and Non-Decoded Scanner. If so, both devices/operations will occur simultaneously. This is not recommended in most cases, especially with devices such as Imager or RFID Readers.*

It is also possible to map different sources to the same owner—for example, [F2] and [F3] can both be mapped to the RFID File System.

Add Source

Only existing trigger sources are shown in the *Source* combo-box. To add a new source to this list, tap on the **Add Source** button. A dialog will pop up and allow you to select the keyboard key to use as a trigger source.

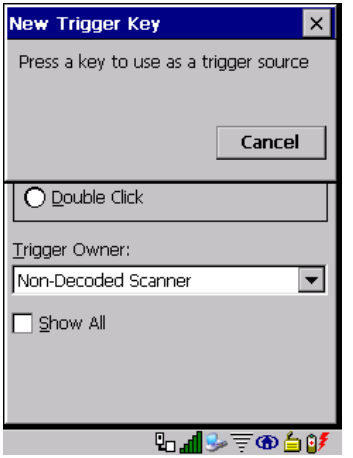

Figure 5.31 Add Source Dialog

Trigger Type

You can enable either an **Up/Down** or **Double Click** response to a trigger press. Normally, when a trigger (keyboard key, etc.) is pressed and released, a "trigger down" event is sent to the "owner"—that is, the application receiving the trigger press information—followed by a "trigger up". If *Double Click* is chosen in this menu, when the trigger is pressed, released, and then pressed again, a "double-click" event will have occurred. If a mapping with the type *Up/down* has also been configured for the same source, it will only receive the first set of trigger events.

Trigger Owner

This identifies the driver or application receiving the trigger presses.

Show All

By default, inactive owners are not shown. By checking this checkbox, all owners, both active and inactive, are displayed.

5.6.7 Certificate Assignment

- In the *Control Panel*, choose the **Certificate** icon.

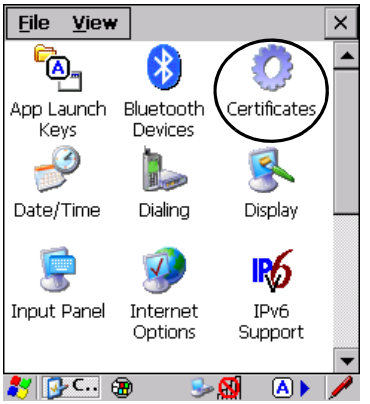

Figure 5.32 Certificates Icon

This option is used in conjunction with 802.1x authentication to enhance 7535 G2 security.

Figure 5.33 Certificates Dialog Box

For a detailed description about *Certificate* setup for both the server and client-side devices (7535 G2s), refer to the following website:

http://www.microsoft.com/windowsserver2003/techinfo/overview/security.mspx

Note: *When importing certificates, the 7535 G2 only recognizes .cer files.*

5.7 *Bluetooth* Setup

Bluetooth is a global standard for wireless connectivity for digital devices and is intended for Personal Area Networks (PAN). The technology is based on a short-range radio link that operates in the ISM band at 2.4 GHz. When two *Bluetooth*-equipped devices come within a 5 meter range of each other, they can establish a connection. Because *Bluetooth* utilizes a radio-based link, it does not require a line-of-sight connection in order to communicate.

Note: *The **Bluetooth** radio uses an internal antenna.*

- In the *Control Panel*, choose the ***Bluetooth*** **Device Properties** icon to display the ***Bluetooth*** *Control* screen.

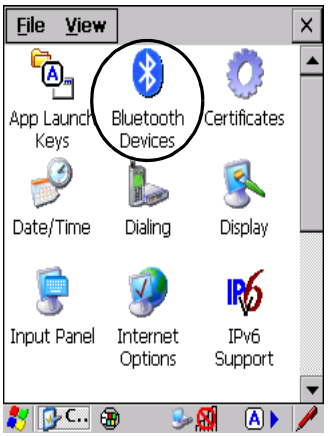

Figure 5.34 *Bluetooth* Icon

The ***Bluetooth*** *Control* dialog box is used to display the other *Bluetooth* devices with which you can communicate.

5.7.1 The Devices Tab

Figure 5.35 The *Bluetooth* Devices Tab

If you intend to configure *Bluetooth* communication with specific devices (a scanner or printer for example), power on and bring the devices within 5 m (16.4 ft.) of the hand-held before proceeding with the discovery process described below.

Scan

- Click on the **Scan** button to list available devices.

Figure 5.36 Available *Bluetooth* Devices

Wait for the 7535 G2 to complete its scan (approximately 20 seconds). When scanning starts, the *Scan* button will change to *Stop*—if necessary, you can tap on this button to stop the process. Once scanning is complete, all discovered devices will be displayed in the list box, with *Name, Address, Active* status, and *PIN* information.

Note: *During the scanning process, addresses are located first, followed by names. Only the names of devices that are within the* ***Bluetooth*** *radio coverage range will be retrieved.*

The *Active* column indicates whether any service is activated for that device. When a service is activated, the device is displayed in the list even when it is not detected during the scan.

The *PIN* column indicates whether you have a PIN (password) set for the device.

At this point you can either query for services or set the PIN for each device. Once you highlight a device in the list box, both the *Services* and *Set PIN* buttons become available.

Services

A discovered device may display several service profiles that it can use to communicate, and you will want to activate the type you need. Supported profiles that can be activated include: DUN (Dial-Up Networking service), Printer (serial service), and LANPPP (LANAccessUsingPPP service). ASync (ActiveSync) is another available profile.

- To start the service scan, highlight a device in the *Devices* tab list, and then click on the **Services** button or double-click on the device entry.

Note: *If the remote device is out of reach or turned off, it can take a considerable amount of time for the Services dialog box to appear—it may appear to be frozen.*

Once the device's service profiles are displayed in the Services list box:

- Highlight the service to be activated.
- Press [SPACE] or right-click to display the Activation menu.

The Activation menu contains four options: Activate, Authenticate, Outgoing, and Encrypt.

Once the service is successfully activated, the assigned port (if applicable) will appear in the *Port* column of the *Services* list box. You can choose to use *BSP* or *COM* as the port name. BSP is the latest Microsoft *Bluetooth* stack standard, but older applications assume serial ports are COM. When using *COM* as the port name, the *Bluetooth* manager will try to find and use a free port between COM7 and COM9. When using *BSP* as the port name, BSP2 to BSP9 are available for use. The port is available as soon as it is activated.

Note: *The CH column shows the RFCOMM channel of the service* ***if*** *the service is RFCOMM-based. This information is not generally needed except for debugging purposes.*

To add a service to the *Outgoing* port, an active service must first be deactivated. Then you can choose the 'Outgoing' option from the Activation menu (highlight a service, right-click or press the [SPACE] bar to display the Activation menu).

The *Authentication* and *Encryption* options can be changed only before activation. To change these after activation, deactivate the service first, then change the options.

Once a service is activated, all the information regarding the service, including the RFCOMM channel number, is saved in the registry. (Some remote devices may change their RFCOMM channel numbers when they reboot, so your saved setting may not work when the remote device is rebooted. In that case, you must deactivate the service and reactivate it to detect the current RFCOMM channel.)

Set PIN

PINs can be set for each device by pressing the **Set PIN** button in the *Devices* tab, or you can skip this step and try to connect to the device first.

Important: ***The remote device must have authentication enabled, otherwise the PIN authentication will fail.***

- Highlight a device, click on the **Set Pin** button, and type the **PIN**.

You will receive a message, either that the PIN has been successfully validated or that it has been rejected.

If the PIN has been validated, an asterisk (*) appears in the PIN column in the *Devices* list box, indicating that this device has a PIN set. Once a PIN is entered, it is saved in the registry.

To remove the PIN:

- Choose **Set PIN**, and press **[**ENTER**]**.

If the 7535 G2 attempts to connect to a remote device that has Authentication enabled and does not have a required PIN set, an *Authentication Request* dialog box appears.

- Enter the **PIN**, and tap on **OK** to connect the devices.

5.7.2 The Servers Tab

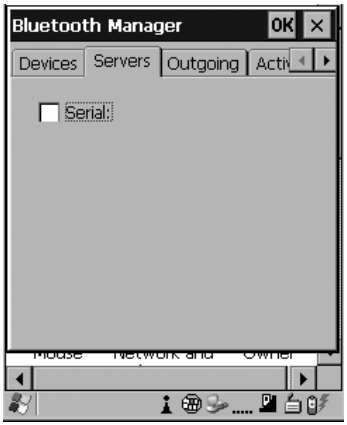

Figure 5.37 The Servers Tab

The *Bluetooth* connection is initiated from your 7535 G2 to the remote device. Therefore the 7535 G2 is called the 'client' and the remote is called the 'server'. The *Servers* tab displays the server profiles that can be activated in your 7535 G2. There is currently one server profile available: Serial.

- Tap on the checkbox to activate the server, and it will display the associated port name beside the server name.

Once you activate a server profile, it is recommended that the 7535 G2 be rebooted before you try to bond from a server.

Note: *You do not need to reboot if you are deactivating a server.*

5.7.3 Outgoing Tab

Figure 5.38 The Outgoing Tab

Outgoing Port acts as a serial port that can be used to connect to a list of *Bluetooth* devices (one at a time), but you have the freedom to ***switch on-the-fly***.

The *Outgoing Port* checkbox allows you to create the Outgoing port. When the port is created, the *Outgoing* tab lists the port name.

The Outgoing list dialog box displays a list of services marked as 'Outgoing'. The * column indicates the currently selected service. You can tap on *Unselect* to reset the current selection, or you can tap on *Select* to make a selection. The *Remove* button deletes the service from the outgoing list.

The Prompt menu determines the behaviour of the pop-up Selection menu. Choosing **Everytime** causes the Selection menu to be displayed each time an outgoing port is created. If you choose **Once**, the menu is displayed only when a partner service is not selected.

To display the *Selection* menu at any time:

- Press [CTRL] [ALT] [F1], and switch the partner *Bluetooth* device.

If a connection to a partner device already exists, the connection is dropped and another connection to the newly selected device is created instantly without disrupting the application that has opened the outgoing port.

Note: *To add a service to the **Outgoing** port, an active service must first be deactivated. Then you can choose the 'Outgoing' option from the Activation menu (highlight a service, right-click or press the [SPACE] bar to display the Activation menu).*

5.7.4 Active Conn. Tab

Figure 5.39 The Active Conn. Tab

The *Active Conn***.** tab lists the *Name*, *Address*, and *Type* of the currently active connections. The table is periodically updated, but it can take a few seconds before it reflects the actual list of connections. The *Type* column of the table shows 'ACL' or 'SCO'. The Connection list table shows the connections for scanning as well as the service connections.

Note: *You can change the device-name and description of your radio by clicking on the System icon in Control Panel, which will open the System Properties dialog box. Click on the Device Name tab to access the menu and change your settings. Then click on OK.*

Although the name will have changed in the Properties menu in ***Bluetooth*** *Controls, the radio only reads it on boot-up. For the changes to take effect, you must cold reset the 7535 G2 (for cold reset instructions, see* "Resetting The Hand-Held" on page 45*).*

5.7.5 The Properties Tab

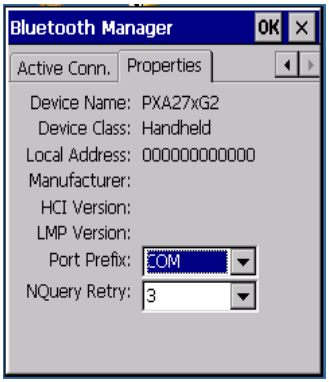

Figure 5.40 The Properties Tab

The *Properties* tab displays information about your 7535 G2, and provides some port options.

The *Device Name* field shows the device name of your 7535 G2. This name can be changed (see the ***Note*** on the previous page for details).

Device Class shows the Class of Device (e.g. desktop, hand-held), which is always set to **Handheld**.

*Local **Bluetooth** Address* shows the address of your 7535 G2 radio.

Port Prefix is used to set the port name to either *BSP* or *COM*. When the name is set to *BSP*, BSP2 to BSP9 are available for activated services (including the server). When *COM* is chosen, COM7 to COM9 are available.

NQuery Retry (Name Query Retry) governs the number of times the hand-held will attempt to query the names of other *Bluetooth* devices if the first attempt fails. (When the 7535 G2 scans for other devices, it sometimes fails to scan names.)

Note: *Keep in mind that setting this parameter to a higher value will lengthen the scan time.*

5.7.6 The *Bluetooth* GPRS WAN Connection

The following steps describe how to set up an internet data connection using a GSM cellular telephone with *Bluetooth*. The 7535 G2 communicates via *Bluetooth* to the cell phone, which then accesses a WAN (Wide Area Network) and transfers data using GPRS.

1. To set up the internet parameters, choose the **Network And Dial-up Connections** icon from the *Control Panel.*

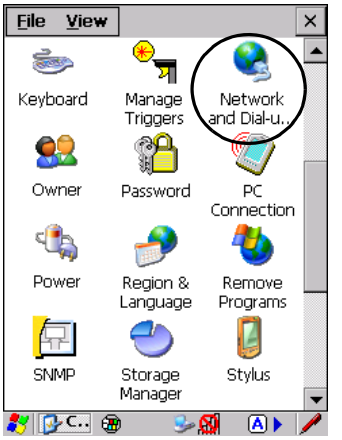

Figure 5.41 Network And Dial-up Connection Icon

2. Choose the **Make New Connection** icon.

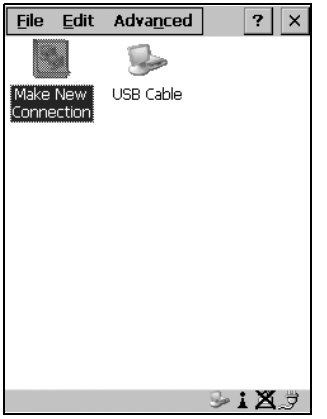

Figure 5.42 Creating A GPRS Connection

3. In the *Make New Connection* dialog box, choose **Dial-Up Connection**. Enter a name for your GPRS network connection.

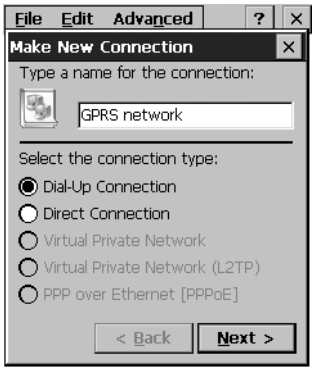

Figure 5.43 Setting Up The Connection

4. Choose the **Next** button to display the *Modem* dialog box.

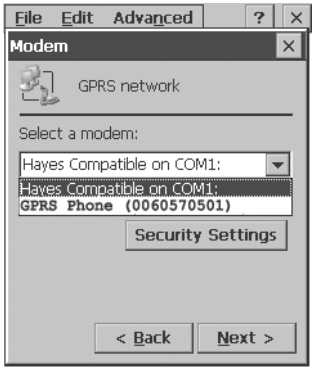

Figure 5.44 Setting Up The Modem

5. In the drop-down menu labelled *Select a modem*, choose the name of the modem with which you want to connect, and then choose the **Configure** button to display the *Device Properties* dialog box.

The 7535 G2 communicates via *Bluetooth* to your *Bluetooth*-equipped cellular telephone and retrieves the parameters for the *Device Properties* dialog box. The 7535 G2 then disconnects.

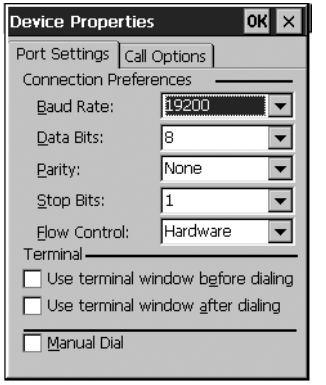

Figure 5.45 Port Settings

6. Under the *Call Options* tab, turn off **Cancel the call if not connected within,** and press [ENTER] to save your changes.

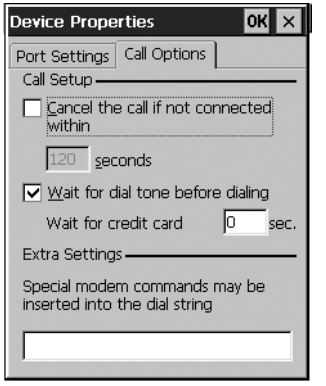

Figure 5.46 Call Options

7. In the *Modem* dialog box, choose the **Next** button to display the *Phone Number* dialog box.

Figure 5.47 Setting The Phone Number

The phone number you enter is network carrier dependent. Once you've specified all the necessary information, choose the **Finish** button.

8. In the *Control Panel*, choose the **Dialing** icon.

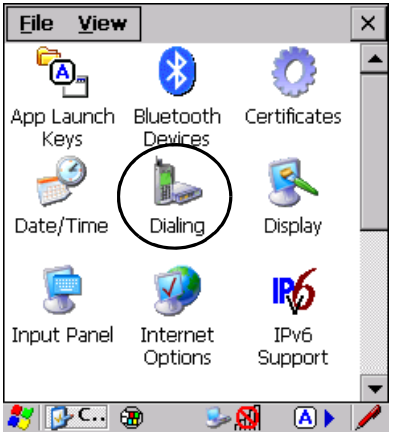

Figure 5.48 Dialing Icon

9. The values in the *Dialing Properties* dialog box need to be edited according to your network carrier specifications.

Figure 5.49 Setting Up Dialing Properties

Once you've edited this dialog box to reflect your network carrier requirements, press [ENTER] to save your changes.

10. At this point, you'll need to return to the *Control Panel,* and choose the **Network and Dial-up Connections** icon.

11. In the network connection window, the new network configuration, in this case *GPRS Network* is displayed. Choose the **new** icon.

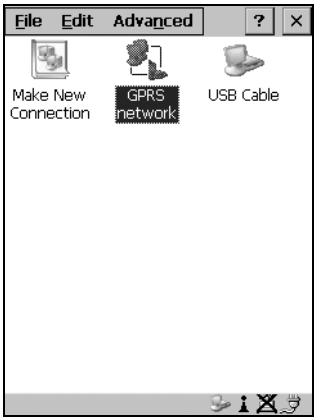

Figure 5.50 GPRS Network Connection

This onscreen message indicates the status of your connection: connected, disconnected, error messages, and so on.

Figure 5.51 Successful Connection

- Select the **Hide** button to move this message to the background.

You can now access the internet.

Figure 5.52 Accessing The Internet

5.8 Total Recall

Total Recall is a Psion Teklogix utility developed to maintain applications and device settings. It allows the setup of one hand-held unit to be quickly duplicated on another, as when first configuring a multi-unit site.

It also allows the complete recovery of a unit where the system Flash memory has been corrupted, or when a unit is being repaired and its internal circuit boards need to be replaced. This utility is based on a backup and restore concept.

- In the *Control Panel*, choose the **Total Recall** icon

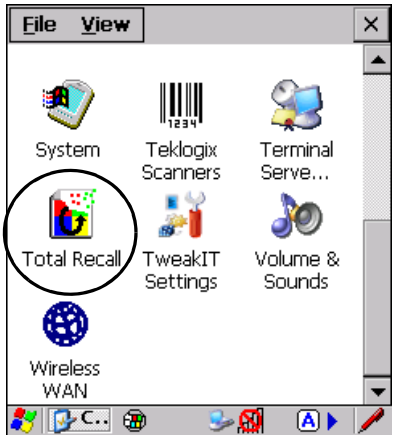

Figure 5.53 Total Recall Icon

5.8.1 Creating A Backup Profile

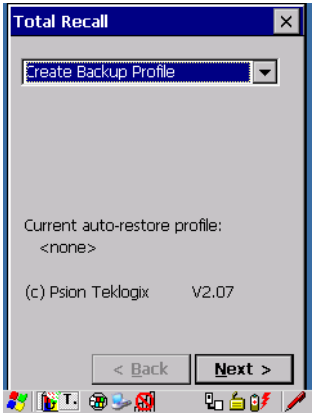

Figure 5.54 Backup Profile

In the drop-down menu, you can choose from four options: Create Backup Profile, View Selected Profile, Restore Selected Profile and Delete Selected Profile. Keep in mind however that until a profile is created, the only available option is *Create Backup Profile.*

- Choose the **Next** button to begin the process.

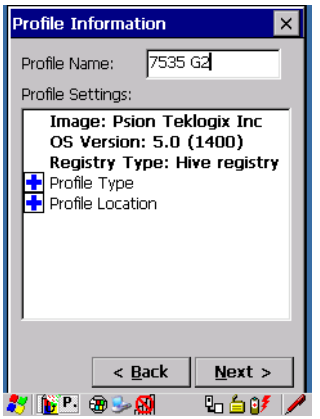

Figure 5.55 Profile Details

Profile Information

This dialog box lists the possible storage destinations for the profile file.

- To begin, type a name for the profile in the field labelled *Profile Name.*

The image type, *OS Version* and *Registry Type,* for the 7535 G2 is also listed here.

- Tap on this icon ⊞ to expand your settings for *Profile Type* and *Profile Location*.

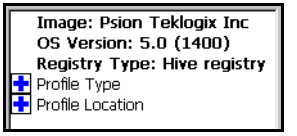

Figure 5.56 Profile Options

- *For this device only* – creates a backup that is manually restored by the operator.
- *AutoRestore for this device only* – creates a profile that automatically restores itself following a cold boot.
- *AutoRestore for this and other devices* – creates a profile that automatically restores after resuming from a cold boot, but it will not contain the touchscreen calibration coordinates or the Wireless radio settings.
- *Profile Location* – allows the operator to specify where the profile is to be saved. The location for the profile is either *\Flash Disk* or *\SD-MMC Card*.

- Tap on the **Next** button to display the next dialog box *Add Files*.

Add Files

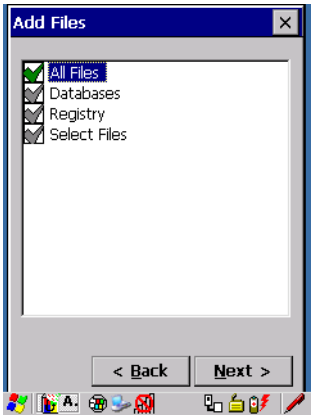

Figure 5.57 Adding Files

By default, *All Files* is selected so that all installed or copied files, database entries, and the Registry will be saved. You can, however, limit the backup to databases, and/or the registry only. By tapping the checkbox next to these items, you can add or remove a check mark to enable or disable the option.

The *Select Files* option allows you to select predefined file types.

- Remove the check mark next to *All Files*. You'll notice the checkbox next to *Select Files* changes ⊞, indicating that additional options are available.
- Choose this icon ⊞ next to *Select Files* to view your options.

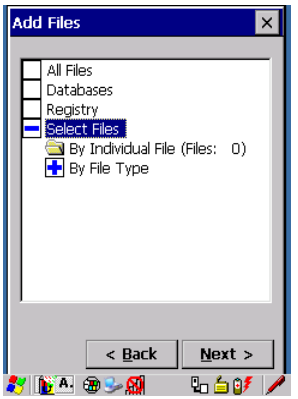

Figure 5.58 By File Type

Choosing **By Individual File** displays a pop-up menu where you can tailor the list of files you want to back up.

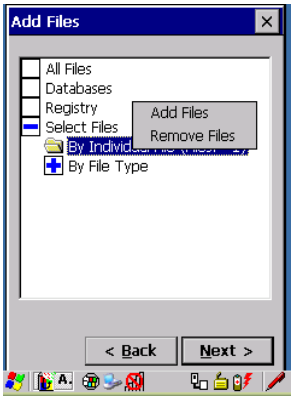

Figure 5.59 Add Files

To *add a file* to your backup list:

- Choose **Add Files**. Browse to and choose the files you want to add to your list.

To *remove a file* from your backup list:

- Choose **Remove Files**—a dialog box is displayed listing the files that will be backed up.
- Highlight the item you want to remove from the list, and tap on the **Remove** button.

Choosing **By File Type** allows you to select the file types that you want backed up.

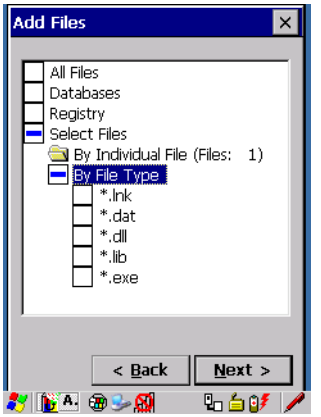

Figure 5.60 Adding Files By File Type

View Selections

Depending on what you have selected for inclusion in your profile, you can view a list of the selected files, databases and/or registry.

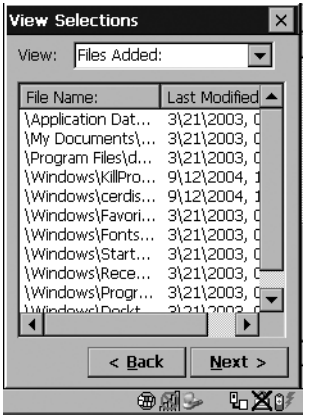

Figure 5.61 Viewing Selections

- Choose the **Next** button to perform the operation.

Perform The Operation

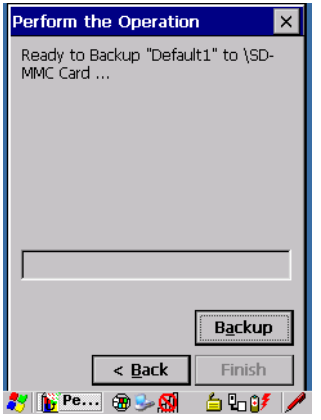

Figure 5.62 Performing The Backup

- Choose the **Backup** button to start the process, and create a profile.

5.8.2 Restoring A Profile

To manually restore a profile:

- Choose **Restore Selected Profile** from the drop-down menu, and choose the **Profile Name** displayed in the drop down box.

Note: *You can also manually restore an auto restore profile located in flash or a storage device.*

5.9 The Storage Manager

The Storage Manager allows the user to view information about the storage devices that are present in the 7535 G2, such as SD-MMC flash cards and Compact Flash cards.

5.9.1 Formatting A Memory Card

Formatting a memory card bulk-erases it. Once a card is erased, partitions may be created in it, similarly to those on a hard drive. Memory-card devices are normally 'mounted' (made available to the system) automatically when they are inserted. They must be dismounted before they can be formatted.

To format an entire memory card:

1. Select *Start*> *Settings*>*Control Panel*.
2. In *Control Panel*, double-click on the **Storage Manager** icon. The Storage Manager menu opens:

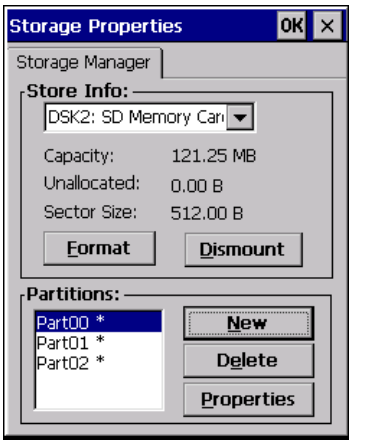

Figure 5.63 Storage Properties Menu

3. Select the memory card from the drop-down list.
4. Press the **Dismount** button to dismount the memory card. All partitions on the card will be dismounted.
5. Press the **Format** button to format the memory card.

Warning: ***All partitions and information on the card will be erased during the formatting process.***

5.9.2 Creating Partitions

Once the card is formatted, new partitions can be created in it. The default is to create one partition that occupies the whole card, but a card can be divided into more than one partition if desired. Each partition appears as a separate folder in Windows Explorer.

To create new partitions:

1. Press the **New** button next to the Partitions list box. The New Partition dialog appears:

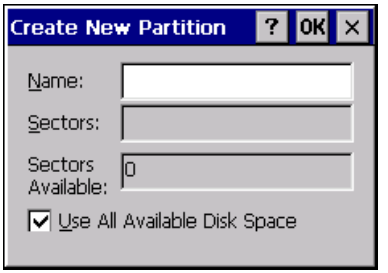

Figure 5.64 New Partition Dialog

2. Enter a name for the partition.
3. If more than one partition is desired, uncheck the *Use All Available Diskspace* checkbox, then specify the desired number of sectors to be used by the partition.

4. Press **OK**. The new partition appears in the Partitions list:

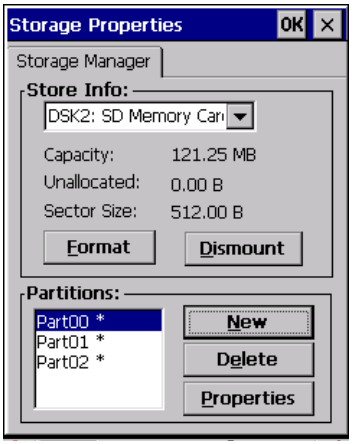

Figure 5.65 Partitions List

The new partition is automatically mounted. This is indicated by an asterisk (*) next to its name in the partition list. Any unallocated space on the card is indicated at the left, and additional partitions can be created in it.

5.9.3 Partition Management

Partitions can be individually dismounted, mounted, deleted, or formatted as well. These and additional tasks are available from the Partition Properties dialog:

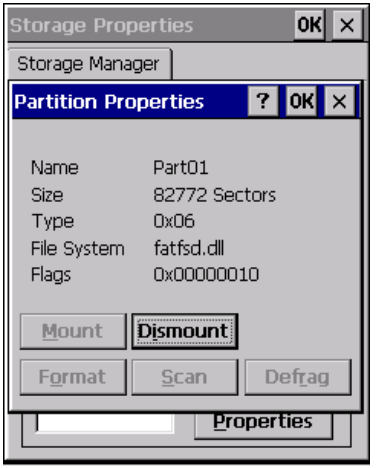

Figure 5.66 Partition Properties Dialog

To dismount a partition:

1. Select the desired partition.
2. Press the **Properties** button. The Partition Properties dialog appears.
3. Press the **Dismount** button. The partition is dismounted. The asterisk disappears next to its name in the partitions list.

To delete a partition:

1. Select the desired partition.
2. Press the **Delete** button. A warning dialog appears.
3. Press the **OK** button. The partition is deleted.

To format a partition:

1. Select the desired partition.
2. Press the **Properties** button. The Partition Properties dialog appears.
3. Press the **Dismount** button. The partition is dismounted. The asterisk disappears next to its name in the partitions list.
4. Press the **Format** button. The Format dialog appears:

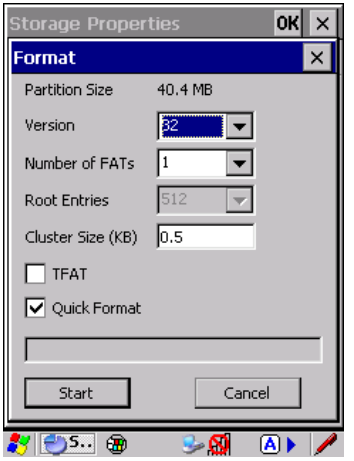

Figure 5.67 Format Dialog

5. Choose your format options. These options include:

   - Version of file system (FAT-16, for devices holding up to 4 GB; or FAT-32, for devices containing up to 32 GB).
   - Number of FATs (File-Allocation Tables).
   - Number of entries allowed in the root directory.
   - Cluster size (.5 KB to 64 KB).

   There are also two checkboxes, which govern:

   - Whether to use the transaction-safe FAT file system (TFAT). This file system keeps multiple copies of the file-allocation table, changing one while maintaining another as a backup.
   - Whether to perform a quick format. Quick formatting removes all reference to data in the partition without erasing the actual partition. The partition will be treated as empty, and new data will overwrite it.

6. Press **Start**. The partition is formatted.

To mount a partition:

1. Select the desired partition.
2. Press the **Properties** button. The Partition Properties dialog appears.
3. Press the **Mount** button. The partition is mounted. The asterisk appears next to its name in the partitions list.

The Partition Properties dialog has buttons for additional functions. Partitions can be defragmented, and their file structure can be scanned.

5.10 IPv6 Support

The *IPv6 Support* icon in the *Control Panel* allows you to activate IPv6 network support on your unit if your network setup requires this. This internet protocol specification (version 6) supports 128-bit IP addresses, replacing version 4.

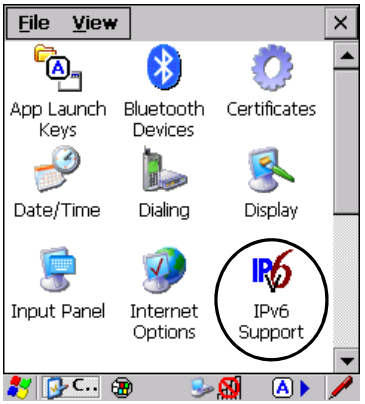

Figure 5.68 IPv6 Support Icon

- Choose the **IPv6 Support** icon to display the associated dialog box.

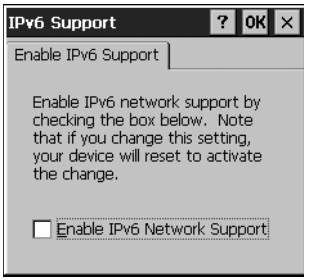
IPv6 Support
OK
Enable IPv6 Support
Enable IPv6 network support by checking the box below. Note that if you change this setting, your device will reset to activate the change.
Enable IPv6 Network Support

Figure 5.69 IPv6 Support Tab

- Choose the checkbox next to **Enable IPv6 Network Support** to enable this internet protocol.

5.11 Scanner Settings

The *Teklogix Scanners* icon in the *Control Panel* provides dialog boxes in which you can tailor bar code options and choose the bar codes your scanner will recognize. The parameters are preset with the default settings of the decoded scanner installed in the unit.

If you wish to recover the factory defaults after making changes, the defaults can be applied to a selected parameter, sub-tree of parameters, or all scanner parameters. Using the stylus, holding on a symbology will pop up a menu to default the sub-tree, or all settings. Holding on an individual setting will pop up a menu to default that setting, or all settings. This option cannot be accessed without a touchscreen.

For a listing of available scanners and their specifications, please refer to Chapter 7: “Specifications”.

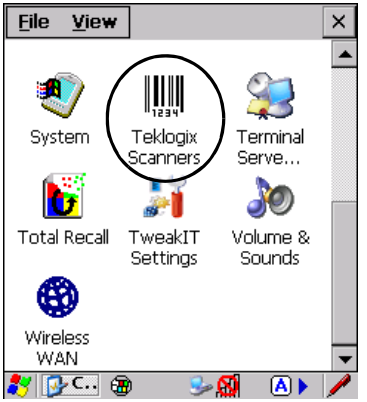

Figure 5.70 Teklogix Scanners Icon

5.11.1 Bar Codes

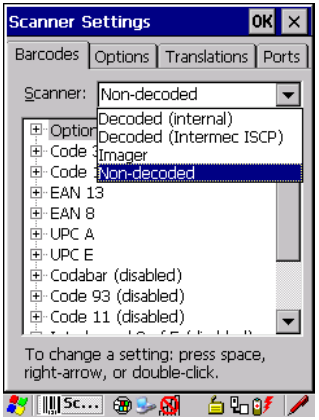

Figure 5.71 Scanner Properties

5.11.1.1 Scanner

The drop-down menu to the right of the *Scanner* option allows you to choose configurations for one of the following scanner types, depending on what is installed in/on your hand-held: **Decoded (internal)**, **Decoded (Intermec ISCP)**, **Imager and Non-decoded**.

The symbologies listed in the *Barcodes* tab change to reflect the scanner you choose and the bar codes it supports. Always defer to your bar code scanner's programming manual when in doubt about the availability or settings for any parameter.

Note: *Your 7535 G2 comes preconfigured from the factory for internal scanner types. The type of scanner installed can be determined from the* System *icon in the Control Panel, under the* System Properties *tab.*

Important: ***To improve the decode speed and performance, enable (set to 'on') only those codes that are required by the application.***

Keep in mind that some bar code types are only available when an internal imaging scanner is installed. All internal scanners can be configured using these dialog boxes. External, *non-decoded* scanners are also configured through the *Scanner Properties* dialog box.

However, external *decoded* scanners must be configured by scanning special configuration bar codes. In these cases, the scanner manufacturer provides programming manuals for configuration purposes.

- For the Symbol LS3408 decoded scanner, refer to the programming guide supplied with your scanner.
- For PowerScan® (PSC) decoded scanners, refer to the PowerScan Programming Guide.

5.11.2 Decoded (Internal) Scanners

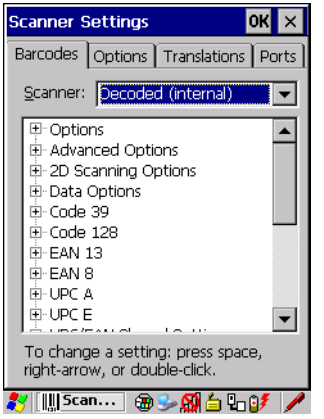

Figure 5.72 Decoded (Internal) Scanner

- Tap on the **Scanner** drop-down menu, and choose **Decoded (internal)**.

5.11.2.1 Options

Note: *Some options are available only for specific scanners. Refer to the option names in this section for scanner model identification.*

Dot Time (msec) (Model SE2223)

The value selected for *Dot Time (msec)* determines (in milliseconds) how long the targeting dot remains on before the scanner switches to a normal scan sweep. When you double-tap on this parameter, a dialog box is displayed in which you can enter a value of 0 msec, 200 msec or 400 msec. A value of 0 (zero) disables the target dot.

Aim Duration (Models SE1223, SE1224, SE1524)

This parameter determines the total time the aiming pattern appears before the scanner laser begins sweeping. When you double-tap on this parameter, a dialog box is displayed in which you can enter a value from 0 to 30 (0 to 3 sec.). A value of 0 (zero) disables the aiming-dot.

Laser On Time

The value assigned to this parameter determines how long the laser will remain on when the scan button or trigger is pressed.

Double-tapping on this parameter displays a dialog box in which you can enter a value between 5 and 99, each number representing 0.1 seconds.

5.11.2.2 Advanced Options

Continuous Scan Mode

Setting this parameter to 'on' keeps the laser on and continuously decoding as long as the scanner button is pressed and held down.

Minimum Cancel Time

The value assigned to this parameter determines the time delay before the scanner is turned off, once the scanner trigger or button is released. This gives the scanner a minimum amount of time to complete its current decode before the scan is cancelled when the user quickly triggers on/off.

Low Power Timeout

To extend laser life, you can select the time the scanner remains active following a successful decode. The scanner wakes from low power mode when a bar code is scanned—a successful decode restores normal blinking.

This is only used if the unit's Trigger Mode has been changed to Continuous On. If the unit is used in a fixed mount this parameter might be used, but not if the unit is used as a hand-held.

When you double-tap on this parameter, a dialog box is displayed in which you can choose a value of 30 sec., 1 min., 2 min. or 3 min.

Parameter Scanning

Setting this parameter to **ON** enables decoding of parameter bar codes.

Linear Security Level

This parameter allows you to select the security level appropriate for your bar code quality. There are four levels of decode security for linear code types (e.g., Code 39, Interleaved 2 of 5). Higher security levels should be selected for decreasing levels of bar code quality. As security levels increase, the scanner's decode speed decreases.

Double-tapping on this parameter displays a dialog box in which you can enter a value from 1 to 4.

Linear security level 1 specifies that the following code types must be successfully read twice before being decoded:

Code Type	Length
Codabar	All
MSI Plessey	4 or less
D 5 of 5	8 or less
I 2 of 5	8 or less

"Linear security level 2" specifies that all types of codes must be successfully read twice before being decoded.

"Linear security level 3" specifies that code types other than the following must be successfully read twice before being decoded. The following codes must be read three times:

Code Type	Length
MSI Plessey	4 or less
D 2 of 5	8 or less
I 2 of 5	8 or less

"Linear security level 4" requires that all code types be successfully read three times before being decoded.

Bi-Direction Redundancy

Note: *This parameter is only valid if a" Linear Security Level" is enabled.*

When this parameter is enabled, a bar code must be successfully scanned in both directions (forward and reverse) before being decoded.

5.11.2.3 2D Scanning Options (Model SE2223)

Scanning Mode

When you double-tap on this parameter, a dialog box is displayed in which you can choose one of the following scanning modes: *Smart Raster*, *Always Raster*, *Programmable Raster*, *Slab Pattern*, *Cyclone Pattern* or *Semi-Omni Pattern*.

Raster Height And Raster Expand Rate

These parameters determine the laser pattern's height and rate of expansion.

Note: *These parameters are only used when either Programmable Raster or Always Raster is assigned to the* 2D Scanning Mode *parameter. "Raster Height" and "Raster Expand Rate" are intended for very specific applications and are usually not required for normal scanning purposes.*

Double-tapping on these parameters displays dialog boxes in which you can enter a value from **1** to **15**.

5.11.2.4 Data Options

Transmit Code ID Char

A code ID character identifies the scanned bar code type. In addition to any single character prefix already selected, the code ID character is inserted between the prefix and the decoded symbol.

When you double-tap on this parameter, a dialog box is displayed in which you can choose a transmit code: None, AIM or Symbol.

Scan Data Format

This parameter allows you to change the scan data transmission format.

Double-tapping on "Scan Data Format" displays the following options from which you can choose a data format: data (as-is), data [S1], data [S2], data [S1][S2], [P] data, [P] data [S1], [P] data [S2] and [P] data [S1][S2].

Prefix [P], Suffix [S1] And Suffix [S2]

A prefix and/or one or two suffixes may be appended to scan data for use in data editing. When you double-tap on these parameters, dialog boxes are displayed in which you can enter a value from **0** to **255**.

Delete Char Set ECIs (Model SE2223)

Setting this parameter to **ON** enables the scanner to delete any escape sequences representing Character Set ECIs (Extended Channel Interpretations [also known as GLIs]) from its buffer before transmission.

When this parameter is enabled, the scanner transmits data from PDF417 and MicroPDF417 bar codes containing Character Set ECIs, even when the ECI Protocol is disabled.

ECI Decoder (Model SE2223)

Setting this parameter to **ON** enables the scanner to interpret any Extended Channel Interpretations (ECIs) supported by the scanner. This parameter has no effect on symbols that were not encoded using ECIs.

If this parameter is set to **OFF** and a symbol that was encoded using an ECI escape is scanned, the scanner transmits the ECI escape followed by the uninterpreted data.

5.11.2.5 Code 39

Enabled

Setting this parameter to **ON** enables "Code 39".

Enable Trioptic Code 39

Note: *"Trioptic Code 39" and "Full ASCII" should **not** be enabled simultaneously. The scanner does not automatically discriminate between these two symbologies.*

Trioptic Code 39 symbols always contain six characters. Setting this parameter to **ON** allows this type of symbology to be recognized.

Convert To Code 32

Note: *"Code 39" must be enabled in order for this parameter to function.*

Setting this parameter to **ON** allows the scanner to convert the bar code from "Code 39" to "Code 32".

Code 32 Prefix

Note: *"Convert to Code 32" must be enabled in order for this parameter to function.*

When this parameter is enabled, the prefix character “A” is added to all “Code 32” bar codes.

Set Length L1 And Set Length L2

Lengths for “Code 39” can be set for **Any length**, **Length within a range**, **One discrete length** or **Two discrete lengths**. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on these parameters displays dialog boxes labelled *Set Code Lengths* where you can define the code length that will be decoded by your scanner.

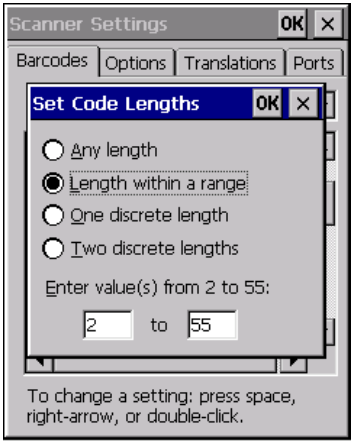

Figure 5.73 Setting Code Lengths

Choosing **One discrete length** allows you to decode only those codes containing a selected length. Choosing **Two discrete lengths** allows you to decode only those codes containing two selected lengths. **Length within a range** allows you to decode a code type within a specified range from **2** to **55**.

Check Digit Verification

When this parameter is enabled, the integrity of a “Code 39” symbol is checked to ensure that it complies with specified algorithms.

Note: *Only those “Code 39” symbols that include a MOD 43 check digit are decoded when this parameter is enabled.*

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must be enabled.

Full ASCII

If this parameter is enabled, the characters +, %, and / are used as escape characters. The combination of an escape character and the next character is converted to an equivalent ASCII character.

Decode Performance (Model SE2223)

If this parameter is enabled, one of three decode levels can be chosen in the "Decode Performance Level" parameter.

Decode Perf. Level (Model SE2223)

This parameter provides three levels of decode performance or "aggressiveness" for Code 39 symbols. Increasing the performance level reduces the amount of required bar code orientation—this is useful when scanning very long and/or truncated bar codes. Keep in mind that increased levels reduce decode security.

When you double-tap on this parameter, a dialog box is displayed in which you can enter a decode performance level of between **1** and **3**.

Field Size/Chars

Field Size

The field size is the length of the field after the first character is stripped and the prefix and suffix characters are added. If the field size is non-zero, only bar codes of that length are passed through.

Prefix Char

This character, if non-zero, is added before a successfully decoded bar code. Press the key you want to insert in the dialog box attached to this parameter. The ASCII/Unicode key value of the keypress is displayed.

Pressing the [ESC] key in this dialog box resets the data to zero.

Suffix Char

Note: *The appended character is treated as any other keyboard character. For example, if [BKSP] is pressed, the usual action for that key is performed. If your unit is operating with the Psion Teklogix ANSI emulation application, the hand-held transmits the escape sequence associated with the function immediately after the bar code data.*

This character, if non-zero, is added after a successfully decoded bar code. Press the key you want to insert in the dialog box attached to this parameter. The ASCII/Unicode key value of the keypress is displayed.

Pressing the [ESC] key in this dialog box resets the data to zero.

Strip Leading

This parameter determines the number of characters that will be removed from the beginning of the bar code before the prefix character is added.

Note: *For Code 39 bar codes, the "AIAG Strip" is performed before the "Strip Leading".*

Strip Trailing

The value entered in this parameter determines the number of characters that will be removed from the end of the bar code before the suffix character is added.

5.11.2.6 Code 128

Enabled

Set this parameter to **ON** to enable "Code 128".

Enable GS1-128/GS1 US

Previously UPC/EAN and UCC, the GS1-128/GS1 US types of bar code include group separators and start codes.

Enable ISBT 128

To successfully scan this type of bar code, this option must be set to **ON**.

Decode Performance (Model SE2223)

If this parameter is set to **ON**, one of three decode levels assigned to the "Decode Performance Level" parameter can be selected.

Decode Perf. Level (Model SE2223)

This parameter provides three levels of decode performance or "aggressiveness" for Code 128 symbols. Increasing the performance level reduces the amount of required bar code orientation, allowing you to scan at an angle horizontal to the bar code. This is useful when scanning very long and/or truncated bar codes. Keep in mind that increased levels reduce decode security. There is a limitation that it can only be used with one fixed length.

When you double-tap on this parameter, a dialog box is displayed in which you can enter a decode performance level of between **1** and **3**.

Field Size/Chars

Refer to page 170 for details.

5.11.2.7 EAN 13

Enabled

Set this parameter to **ON** to enable "EAN 13".

Prefix/Suffix

Prefix Char

This character, if non-zero, is added before a successfully decoded bar code. Press the key you want to insert in the dialog box attached to this parameter. The ASCII/Unicode key value of the keypress is displayed.

Pressing the [ESC] key in this dialog box resets the data to zero.

Suffix Char

This character, if non-zero, is added after a successfully decoded bar code. Press the key you want to insert in the dialog box attached to this parameter. The ASCII/Unicode key value of the keypress is displayed.

Pressing the [ESC] key in this dialog box resets the data to zero.

Strip Leading

This parameter determines the number of characters that will be removed from the beginning of the bar code before the prefix character is added.

Note: *The appended character is treated as any other keyboard character. For example, if [BKSP] is pressed, the usual action for that key is performed. If your hand-held is operating with the Psion Teklogix ANSI emulation application, the hand-held transmits the escape sequence associated with the function immediately after the bar code data.*

Strip Trailing

The value entered in this parameter determines the number of characters that will be removed from the end of the bar code before the suffix character is added.

5.11.2.8 EAN 8

Enabled

Set this parameter to **ON** to enable "EAN 8".

EAN-8 Zero Extend

When this parameter is enabled, five leading zeros are added to decoded EAN-8 symbols, making them compatible in format to EAN-13 symbols. Disabling this parameter returns EAN-8 symbols to their normal format.

Prefix/Suffix

See "Prefix/Suffix" beginning on page 172.

5.11.2.9 UPC A

Enabled

Set this parameter to **ON** to enable "UPC A".

UPC-A, Check Digit

If you enable this parameter, the check digit is included with the decoded bar code data.

UPC-A, Preamble

When you double-tap on this parameter, a dialog box is displayed where you can choose one of three options for lead-in characters for UPC-A symbols transmitted to the host device:

System Char – system character transmitted with the data,

Country code and System Char – both the country code ("0" for USA) and system character are transmitted with the data, or

None – no preamble is transmitted. The lead-in characters are considered part of the symbol.

Prefix/Suffix

See "Prefix/Suffix" beginning on page 172.

5.11.2.10 UPC E

Enabled UPC-E

Set this parameter to **ON** to allow "UPC E" bar code scans.

Enabled UPC-E1

Set this parameter to **ON** to allow "UPC-E1" (zero suppressed) bar code scans.

UPC-E And UPC-E1 Check Digit

If you enable one or both of these parameters, a check digit is included with the decoded bar code data.

UPC-E And UPC-E1 Preamble

When you double-tap on one of these parameters, a dialog box is displayed where you can choose one of three options for lead-in characters for UPC-E and UPC-E1 symbols transmitted to the host device:

System Char – system character transmitted with the data,

Country code and System Char – both the country code ("0" for USA) and system character are transmitted with the data, or

None – no preamble is transmitted. The lead-in characters are considered part of the symbol.

Conv. UPC-E To UPC-A

This parameter converts UPC-E (zero suppressed) decoded data to UPC-A format before transmission. After conversion, data follows UPC-A format and is affected by UPC-A programming selections (e.g., Preamble, Check Digit).

Conv. UPC-E1 To UPC-A

This parameter converts UPC-E1 (zero suppressed) decoded data to UPC-A format before transmission. After conversion, data follows UPC-A format and is affected by UPC-A programming selections (e.g., Preamble, Check Digit).

Prefix/Suffix

See "Prefix/Suffix" beginning on page 172.

5.11.2.11 UPC/EAN Shared Settings

The parameters you set here are a shared across all available UPC and EAN bar codes.

Enable Bookland EAN

Setting this parameter to ON allows your scanner to recognize Bookland EAN bar codes.

Supplementals

'Supplementals" are additionally appended characters (2 or 5).

Double-tapping this parameter displays a list of options. If **Ignore** is chosen, UPC/EAN is decoded and the supplemental characters are ignored. If **Decode** is chosen, UPC/EAN symbols are decoded ***with*** supplementals. **Autodiscriminate** works in conjunction with the Supp. Redundancy parameter.

Supp. Redundancy

With "Autodiscriminate" selected in the "Supplementals" parameter, "Supp. Redundancy" adjusts the number of times a symbol without supplementals is decoded before transmission.

When you double-tap on this parameter, a dialog is displayed in which you can enter a value between 2 and 20. A value of 5 or above is recommended when **Autodiscriminate** is selected and you are decoding a mix of UPC/EAN symbols with and without supplementals.

Security Level

This parameter controls the tolerance for decoding edge-to-edge UPC/EAN bar codes. Double-tapping on this parameter displays a dialog box in which you can choose a level from 0 to 3. Lower values have a lower tolerance for misreads, but they also increase the time it takes to decode the bar code.

Linear Decode (Model SE2223)

"Linear Decode" applies to code types containing two adjacent blocks (e.g., UPC-A, EAN-8, EAN-13). When enabled (set to **ON**), a bar code is transmitted only when both the left and right blocks are successfully decoded within one laser scan. This option should be enabled when bar codes are in proximity to each other.

2D UPC Half Block Stitching (Model SE2223)

Setting this parameter to **ON** enables "UPC Half Block Stitching" for the SE 3223 omnidirectional engine only.

5.11.2.12 Code 93

Enabled

Set this parameter to **ON** to enable "Code 93".

Set Length L1 And Set Length L2

Lengths for "Code 93" can be set for **Any length**, **Length within a range**, **One discrete length** or **Two discrete lengths**. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on this parameter displays a dialog box labelled **Set Code Lengths** where you can define the code length that will be recognized by your scanner.

Choosing **One discrete length** allows you to decode only those codes containing a selected length. Choosing **Two discrete lengths** allows you to decode only those codes containing two selected lengths. **Length within a range** allows you to decode a code type within a specified range from 4 to 55.

Field Size/Chars

Refer to page 170 for details.

5.11.2.13 Codabar

Enabled

Set this parameter to **ON** to enable "Codabar".

Set Length L1 And Set Length L2

Lengths for "Codabar" can be set for **Any length**, **Length within a range**, **One discrete length** or **Two discrete lengths**. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on this parameter displays a dialog box labelled *Set Code Lengths* where you can define the code length that will be recognized by your scanner.

Choosing **One discrete length** allows you to decode only those codes containing a selected length. Choosing **Two discrete lengths** allows you to decode only those codes containing two selected lengths. **Length within a range** allows you to decode a code type within a specified range from 5 to 55.

CLSI Editing

When enabled, this parameter strips the start and stop characters and inserts a space after the first, fifth, and tenth characters of a 14-character Codabar symbol.

Note: *Symbol length does not include start and stop characters.*

NOTIS Editing

When enabled, this parameter strips the start and stop characters from decoded Codabar symbol.

Field Size/Chars

Refer to page 170 for details.

5.11.2.14 MSI Plessey

Enabled

Set this parameter to **ON** to enable "MSI Plessey".

Set Length L1 And Set Length L2

Lengths for "MSI Plessey" can be set for **Any length, Length within a range, One discrete length** or **Two discrete lengths**. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on this parameter displays a dialog box labelled **Set Code Lengths** where you can define the code length that will be recognized by your scanner.

Choosing **One discrete length** allows you to decode only those codes containing a selected length. Choosing **Two discrete lengths** allows you to decode only those codes containing two selected lengths. **Length within a range** allows you to decode a code type within a specified range from 6 to 55.

Check Digits

Double-tapping on this parameter displays a dialog box in which you can choose One or Two check digit(s).

If this parameter is set to **One**, it is assumed that the last digit is a check digit. If "Check Digits" is set to **Two**, it is assumed that the last two digits are check digits.

Note: *If* **Two** *check digits is selected, an MSI Plessey "Check Digit Algorithm" must also be selected. See page 9-88.*

Transmit Check Digit

If this parameter is enabled, the check digit is included with the bar code data.

Check Digit Algorithm

When the Two MSI Plessey check digits option is selected, an additional verification is required to ensure integrity. Double-tapping on this parameter displays a dialog box in which you can choose the algorithm to be used: MOD 10/MOD 11 or MOD 10/MOD 10.

Field Size/Chars

Refer to page 170 for details.

5.11.2.15 Interleaved 2 of 5

Enabled

Set this parameter to **ON** to enable "Interleaved 2 of 5".

Set Length L1 And Set Length L2

Lengths for "Interleaved 2 of 5" can be set for **Any length, Length within a range, One discrete length** or **Two discrete lengths**. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on this parameter displays a dialog box labelled **Set Code Lengths** where you can define the code length that will be recognized by your scanner.

Choosing **One discrete length** allows you to decode only those codes containing a selected length.

Choosing **Two discrete lengths** allows you to decode only those codes containing two selected lengths.

Length within a range allows you to decode a code type within a specified range from 4 to 14.

Check Digit Verification

When enabled, this parameter checks the integrity of an I 2 of 5 symbol to ensure it complies with a specified algorithm: either USS (Uniform Symbology Specification) or OPCC (Optical Product Code Council).

Transmit Check Digit

If this parameter is enabled, the check digit is included with the bar code data.

Convert To EAN 13

If this parameter is enabled, an I 2 of 5 bar code is converted to EAN 13.

Field Size/Chars

Refer to page 170 for details.

5.11.2.16 Discrete 2 of 5

Enabled

Set this parameter to **ON** to enable "Discrete 2 of 5".

Set Length L1 And Set Length L2

Lengths for "Discrete 2 of 5" can be set for **Any length, Length within a range, One discrete length or Two discrete lengths**. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on this parameter displays a dialog box labelled **Set Code Lengths** where you can define the code length that will be recognized by your scanner.

Choosing **One discrete length** allows you to decode only those codes containing a selected length. Choosing **Two discrete lengths** allows you to decode only those codes containing two selected lengths. **Length within a range** allows you to decode a code type within a specified range from 1 to 12.

Field Size/Chars

Refer to page 170 for details.

5.11.2.17 RSS Code (Reduced Space Symbology)

Enable RSS-14 (Models SE1224, SE1524, SE2223)

RSS-14 code can be either purely linear or split in half with one half stacked on top of the other half. Stacking the code reduces the bar code length, and providing the nominal height of the code is maintained, it can be omni-directionally scanned.

Enable RSS Limited (Models SE1224, SE1524, SE2223)

‘RSS-Limited” is restricted, in that it can only encode 14 digit GTINs (global trade item numbers) that begin with either 0 or 1. It is not stackable and is not designed to be read omni-directionally.

Enable RSS Expanded (Models SE1224, SE1524, SE2223)

‘RSS Expanded” uses the same application identifiers as UCC/EAN-128 codes but they can be split into sections and stacked several rows high, reducing the length of the symbol, while increasing the capacity of data that can be stored. “RSS Expanded” code can be omni-directionally scanned.

Field Size/Chars

Refer to page 170 for details.

5.11.2.18 Composite (Model SE2223)

Important: ***To successfully read this type of bar code, the two types of symbologies included in a composite bar code must be enabled.***

A composite symbol includes multi-row 2D components making it compatible with linear and area CCD scanners along with linear and rastering laser scanners.
The options available for this parameter represent multi-level components of a composite symbol.

Enable CC-C And Enable CC-AB

To activate these components, set the parameters to **ON**.

Enable TLC-39

This composite component integrates MicroPDF417 with the linear code. Setting this parameter to **ON** enables this parameter.

5.11.2.19 PDF-417 (Model SE2223)

Enabled

Setting this parameter to **ON** enables PDF-417 two dimensional (2D) coding.

Field Size/Chars

Refer to page 170 for details.

5.11.2.20 Micro PDF-417 (Model SE2223)

Enabled

Setting this parameter to **ON** enables "2D Micro PDF-417" bar code scanning. Micro PDF-417 is a multi-row symbology that is useful for applications requiring greater area efficiency but lower data capacity than PDF-417.

Code 128 Emulation

When this parameter is enabled, the scanner transmits data from certain Micro PDF-417 symbols as if it was encoded in Code 128 symbols.

If Code 128 Emulation is enabled, the following Micro PDF-417 symbols are transmitted with one of the following prefixes:

]C1 if the first codeword is 903-907, 912, 914, 915

]C2 if the first codeword is 908 or 909

]C0 if the first codeword is 910 or 911

If Code 128 Emulation is set to OFF, the Micro PDF-417 symbols are transmitted with one of the following prefixes:

]L3 if the first codeword is 903-907, 912, 914, 915

]L4 if the first codeword is 908 or 909

]L5 if the first codeword is 910 or 911

Field Size/Chars

Refer to page 170 for details.

5.11.3 Decoded (Intermec ISCP)

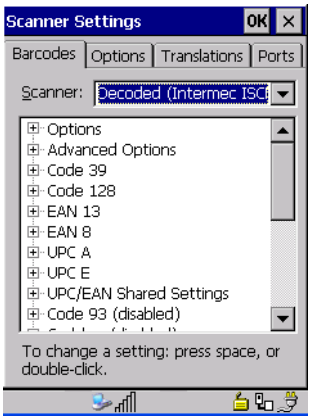

Figure 5.74 Decoded Intermec Scanner

- Tap on the **Scanner** drop-down menu, and choose **Decoded (Intermec ISCP).**

5.11.3.1 Options

Laser On Time

The value assigned to this parameter determines how long the laser will remain on when the scan button or trigger is pressed.

Double-tapping on this parameter displays a dialog box in which you can enter a value between 1 and 10 seconds.

5.11.3.2 Advanced Options

Continuous Scan Mode

Setting this parameter to **ON** keeps the laser on and continuously decoding as long as the scanner button is pressed and held down.

Minimum Cancel Time

The value assigned to this parameter determines the time delay before the scanner is turned off, once the scanner trigger or button is released. This gives the scanner a minimum amount of time to complete its current decode before the scan is cancelled when the user quickly triggers on/off.

Low Power Timeout

To extend laser life, you can select the time the scanner remains active following a successful decode. The scanner wakes from low power mode when a bar code is scanned—a successful decode restores normal blinking.

This is only used if the unit's Trigger Mode has been changed to Continuous On. If the unit is used in a fixed mount this parameter might be used, but not if the unit is used as a hand-held.

When you double-tap on this parameter, a dialog box is displayed in which you can choose a value of 30 sec., 1 min., 2 min. or 3 min.

Parameter Scanning

Setting this parameter to **ON** enables decoding of parameter bar codes.

Same Read Validate

The data is only transmitted after repeated reads give the same result. The value assigned at this parameter determines the number of reads required, from 0 to 10 times.

Same Read Timeout

Prevents the same bar code from being read more than once. The value assigned determines after what time period the scanner will timeout, from 0 to 2550 msec.

Diff Read Timeout

Prevents unwanted reading of other bar codes on the same label. The value assigned determines after what time period the scanner will timeout, from 0 to 2550 msec.

5.11.3.3 Code 39

Enabled

Setting this parameter to **ON** enables "Code 39".

Full ASCII

If this parameter is enabled, the characters +, %, and / are used as escape characters. The combination of an escape character and the next character is converted to an equivalent ASCII character.

Reading Range

Determines the reading distance from which a bar code can be successfully scanned. The default setting **Extended**, allows for increased reading distance.

Start/Stop Transmit

Setting this parameter to **ON** enables the transmission of start and stop characters, which are usually not transmitted. Code 39 can start and end with either a ***** or a **$** character (see also next parameter *Accepted Start Char*).

Accepted Start Char

This parameter allows the user the option of using one of the two start/stop characters or both **($ char**, *** char**, **$ and * char**).

Check Digit Verification

Uses the specified algorithm of the option you've chosen to ensure the integrity of the symbol data before transmitting. If the data does not contain that algorithm, the data is not transmitted. The available options are: **Disabled**, **MOD 43 Check**, **French CIP**, or **Italian CIP**.

Notes: *French CIP (French pharmaceutical) is only used with bar codes containing 7 characters.*

Italian CIP (Italian pharmaceutical) is also known as Code 32. It is transmitted as a standard Code 39 if checksum is not validated.

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must be enabled.

Minimum Length

Minimum lengths for the bar code can be set from **0** to **255**. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Field Size/Chars

Refer to page 170 for details.

5.11.3.4 Code 128

Enabled

Setting this parameter to **ON** enables “Code 128”.

GS1-128

“GS1-128” is the GS1 implementation of the Code 128 barcode specification. The former correct name was UCC/EAN-128.

GS1-128 Identifier

“GS1-128 Identifier” allows the AIM ID "]C1" for EAN 128 to be transmitted or removed. By default, this identifier is transmitted if EAN 128 is enabled.

GTIN Compliant

GTIN (global trade item number) processing transmits EAN 128 as the 14-character EAN/UCC GTIN. To use GTIN processing, you must activate the EAN 128 symbology.

Important: ***When EAN 128 and GTIN processing are both activated, it is not possible to read normal EAN 128 Codes.***

FNC1 Conversion

This parameter allows the embedded FNC1 character to be converted to another character for applications that cannot use the default <GS> Group Separator or hex (1d).

Enable ISBT 128

To successfully scan this type of bar code (International Society of Blood Transfusion), this option must be set to **ON**. If you enable this type of bar code, Code 128/EAN 128 is deactivated to avoid any confusion.

ISBT Concat Transmit

The codes are not concatenated by default. You need to choose one of the options provided for this parameter to send concatenated code. Choosing **Only Concatenated Codes** transmits only concatenated codes—single codes will not be transmitted. Choosing **Concatenated or Single** transmits single codes or concatenated codes. If only one code of a pair is read, that code will be transmitted as a single code. If both codes in a pair are detected, they will be concatenated provided that **ISBT Concat Any Pair** (see below) is enabled.

ISBT Concat Any Pair

Enabling this parameter causes all code pairs that can be, to be concatenated even if they do not comply with Section 4.1 of the "ISBT 128 Bar Code Symbology and Application Specification for Labeling of Whole Blood and Blood Components" (June 2000, Version 1.2.1).

Reading Range

Determines the reading distance from which a bar code can be successfully scanned. The default setting **Extended**, allows for increased reading distance.

Check Digit Verification

Uses the specified algorithm of the option you've chosen to ensure the integrity of the symbol data before transmitting. If the data does not contain that algorithm, the data is not transmitted. The available options are: **Disabled**, or **French CIP**.

Note: *French CIP (French pharmaceutical) is only used with bar codes containing 7 characters.*

Minimum Length

Minimum lengths for the bar code can be set from **0** to **255**. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Field Size/Chars

Refer to page 170 for details.

5.11.3.5 EAN 13

Enabled

Set this parameter to **ON** to enable "EAN 13".

ISBN Conversion

When this parameter (International Standard Book Number) is enabled, the first 3 characters ('978') are ignored and the checksum (0.9, 'X') is calculated on the remaining characters.

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must be enabled.

Prefix/Suffix

See “Prefix/Suffix” beginning on page 172.

5.11.3.6 EAN 8

Enabled

Set this parameter to **ON** to enable “EAN 8”.

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must be enabled.

Convert To EAN 13

If this parameter is enabled, an EAN 8 bar code is converted to EAN 13.

Prefix/Suffix

See “Prefix/Suffix” beginning on page 172.

5.11.3.7 UPC A

Enabled

Set this parameter to **ON** to enable “UPC A” bar code scanning recognition.

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must be enabled.

Transmit Number System

If this parameter is enabled, the number system digit is transmitted with the decoded bar code data.

Convert To EAN 13

If this parameter is enabled, a UPC A bar code is converted to EAN 13.

Prefix/Suffix

See “Prefix/Suffix” beginning on page 172.

5.11.3.8 UPC E

Enabled

Set this parameter to **ON** to enable "UPC E".

Enable UPC-E1

Set this parameter to **ON** to allow "UPC-E1" (zero suppressed) bar code scans.

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must be enabled.

Transmit Number System

If this parameter is enabled, the number system digit is transmitted with the decoded bar code data.

Convert To UPC-A

This parameter converts UPC E (zero suppressed) decoded data to UPC A format before transmission. After conversion, data follows UPC A format and is affected by UPC A programming selections (e.g. Check Digit).

Prefix/Suffix

See "Prefix/Suffix" beginning on page 172.

5.11.3.9 UPC/EAN Shared Settings

The setting assigned to the *Addendum* parameter associated with this option is shared across all UPC and EAN bar codes.

Addendum

An addendum is a separate bar code, supplementary to the main bar code.
This parameter provides two options: **Not Required but Transmitted if Read** or **Required and Transmitted**.

- Double-tap on **Addendum** to display a dialog box listing your options.
- Highlight an item, and tap on **OK**.

When *Addendum* is set to **Not Required but Transmitted if Read**, the scanner searches for an addendum and if one exists, appends it to the main bar code. When the parameter is set to **Required and Transmitted,** the scanner does not accept the main bar code without an addendum.

Addendum Add-on 2 And Addendum Add-on 5

Enabling these parameters sets the length of the addendum bar code to either **2** or **5** characters.

Addendum Security

This parameter defines the security level for *Addendum Add-on 2* and *Addendum Add-on 5*. The higher the security level, the lower the decode rate, which can be set from **0** to **100**.

GTIN Compliant

GTIN (global trade item number) processing transmits EAN 128 as the 14-character EAN/UCC GTIN. To use GTIN processing, you must activate the EAN 128 symbology.

Important: ***When EAN 128 and GTIN processing are both activated, it is not possible to read normal EAN 128 Codes.***

Reading Range

Determines the reading distance from which a bar code can be successfully scanned. The default setting **Extended**, allows for increased reading distance.

5.11.3.10 Code 93

Enabled

Set this parameter to **ON** to enable “Code 93”.

Minimum Length

Minimum lengths for the bar code can be set from **0** to **255**. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Field Size/Char

Refer to page 170 for details.

5.11.3.11 Codabar

Enabled

Set this parameter to **ON** to enable “Codabar”.

Start/Stop Transmit

Codabar can use the following sets of characters as start and stop characters:

a, **b**, **c**, **d**

A, **B**, **C**, **D**

a, **b**, **c**, **d**, **/**, **t**, **n**, *****, **e**

DC1, **DC2**, **DC3**, **DC4**

Thus, when a set is chosen, the first and last digits of a Codabar message must be one of those characters and the body of the message should not contain these characters. Setting this parameter to **Not Transmitted** strips the start and stop characters from this bar code.

CLSI Library System

When enabled, spaces are inserted after characters 1, 5, 10 in the 14-character label (used in the USA by libraries using the CLSI system).

Check Digit Verification

When enabled, this parameter checks the integrity of an I 2 of 5 symbol to ensure it complies with a specified algorithm: either USS (Uniform Symbology Specification) or OPCC (Optical Product Code Council).

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must be enabled.

Set Length L1, Set Length L2, And Set Length L3

Lengths for "Codabar" can be set from **0** to **255**. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on these parameters displays dialog boxes where you can define the code length that will be recognized by your scanner.

Length Mode

You can choose to set **L1 as Minimum Length** or **L1,L2,L3 as Fixed Length**.

Field Size/Char

Refer to page 170 for details.

5.11.3.12 MSI Plessey

Enabled

Set this parameter to **ON** to enable “MSI Plessey”.

Enable Plessy

Set this parameter to **ON** to enable the “Plessy” bar code.

Check Digit Verification

Uses the specified algorithm of the option you've chosen to ensure the integrity of the symbol data before transmitting. If the data does not contain that algorithm, the data is not transmitted. The available options are: **MOD 10 Check**, or **Double MOD 10 Check**.

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must be enabled.

Plessy Transmit Check Digit

If the check digit is to be transmitted with the Plessy data, this parameter must be enabled.

Minimum Length

Minimum lengths for the bar code can be set from **0** to **255**. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Plessy Minimum Length

Minimum lengths for the Plessy bar code can be set from **0** to **255**. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Field Size/Char

Refer to page 170 for details.

5.11.3.13 Code 11

Enabled

Set this parameter to **ON** to enable “Code 11”.

Check Digit Verification

Uses the specified algorithm of the option you've chosen to ensure the integrity of the symbol data before transmitting. If the data does not contain that algorithm, the data is not transmitted. The available options are: **One Check Digit** or **Two Check Digits**.

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must be enabled.

Minimum Length

Minimum lengths for the bar code can be set from **0** to **255**. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Field Size/Chars

Refer to page 170 for details.

5.11.3.14 Interleaved 2 of 5

Enabled

Set this parameter to **ON** to enable "Interleaved 2 of 5".

Reading Range

Determines the reading distance from which a bar code can be successfully scanned. The default setting **Extended**, allows for increased reading distance.

Check Digit Verification

Uses the specified algorithm of the option you've chosen to ensure the integrity of the symbol data before transmitting. If the data does not contain that algorithm, the data is not transmitted. The available options are: **Disabled**, **MOD 10 Check**, or **French CIP**.

Note: *French CIP (French pharmaceutical) is only used with bar codes containing 7 characters.*

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must be enabled.

Set Length L1, Set Length L2, And Set Length L3

Lengths for "Codabar" can be set from **0** to **255**. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on these parameters displays dialog boxes where you can define the code length that will be recognized by your scanner.

Length Mode

You can chose to set **L1 as Minimum Length** or **L1,L2,L3 as Fixed Length**.

Field Size/Chars

Refer to page 170 for details.

5.11.3.15 Matrix 2 of 5

Enabled

Set this parameter to **ON** to enable "Matrix 2 of 5".

Minimum Length

Minimum lengths for the bar code can be set from **0** to **255**. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Field Size/Chars

Refer to page 170 for details.

5.11.3.16 Discrete 2 of 5

Enabled

Set this parameter to **ON** to enable "Discrete 2 of 5".

Standard 2 of 5 Format

You can choose as the standard format either **Identicon (6 start/stop bars)** or **Computer Identics (4 start/stop bars)**.

Check Digit Verification

Uses the specified algorithm of the option you've chosen to ensure the integrity of the symbol data before transmitting. If the data does not contain that algorithm, the data is not transmitted. The available options are: **Disabled**, or **MOD 10 Check**.

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must be enabled.

Set Length L1, Set Length L2, And Set Length L3

Lengths for "Codabar" can be set from **0** to **255**. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on these parameters displays dialog boxes where you can define the code length that will be recognized by your scanner.

Length Mode

You can chose to set **L1 as Minimum Length** or **L1,L2,L3 as Fixed Length**.

Field Size/Chars

Refer to page 170 for details.

5.11.3.17 Telepen

Enabled

Set this parameter to **ON** to enable "Telepen".

Format

Set the bar code character type to either **ASCII** or **Numeric**.

Minimum Length

Minimum lengths for the bar code can be set from **0** to **255**. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Field Size/Chars

Refer to page 170 for details.

5.11.3.18 RSS Code (Reduced Space Symbology)

Enable RSS-14

RSS-14 code can be either purely linear or split in half with one half stacked on top of the other half. Stacking the code reduces the bar code length, and providing the nominal height of the code is maintained, it can be omni-directionally scanned.

Enable RSS Limited

'RSS-Limited" is restricted, in that it can only encode 14 digit GTINs (global trade item numbers) that begin with either 0 or 1. It is not stackable and is not designed to be read omni-directionally.

Enable RSS Expanded

'RSS Expanded" uses the same application identifiers as UCC/EAN-128 codes but they can be split into sections and stacked several rows high, reducing the length of the symbol, while increasing the capacity of data that can be stored. "RSS Expanded" code can be omni-directionally scanned.

Field Size/Chars

Refer to page 170 for details.

5.11.3.19 PDF-417

Enabled

Set this parameter to **ON** to enable "2D PDF-417".

Field Size/Chars

Refer to page 170 for details.

5.11.3.20 Micro PDF-417

Enabled

Set this parameter to **ON** to enable "2D Micro PDF-417".

Code 128 Emulation

When this parameter is enabled, the scanner transmits data from certain Micro PDF-417 symbols as if it was encoded in Code 128 symbols.

If Code 128 Emulation is enabled, the following Micro PDF-417 symbols are transmitted with one of the following prefixes:

-]C1 if the first codeword is 903-907, 912, 914, 915
-]C2 if the first codeword is 908 or 909
-]C0 if the first codeword is 910 or 911

If Code 128 Emulation is set to **OFF**, the Micro PDF-417 symbols are transmitted with one of the following prefixes:

]L3 if the first codeword is 903-907, 912, 914, 915

]L4 if the first codeword is 908 or 909

]L5 if the first codeword is 910 or 911

Field Size/Chars

Refer to page 170 for details.

5.11.3.21 Codablock

Enable Codablock A

Set this parameter to **ON** to enable Codablock type A.

Enable Codablock F

Set this parameter to **ON** to enable Codablock type F.

Field Size/Chars

Refer to page 170 for details.

5.11.4 Imager

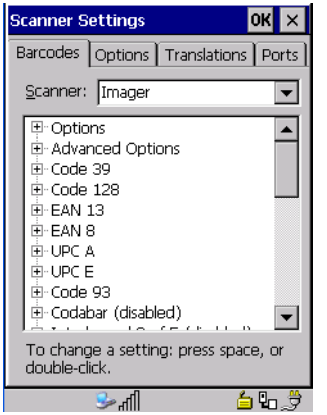

Figure 5.75 Imager

- Tap on the **Scanner** drop-down menu, and choose **Imager**.

5.11.4.1 Options

TekImager Enabled

Setting this option to **ON** enables the imager installed in your hand-held.

Continuous Scan Mode

Setting this parameter to **ON** keeps image capture active and continuously decoding as long as the scanner button is pressed and held down.

Center Barcode Only

Note: *This parameter must be disabled when reading Composite bar codes.*

When more than one bar code is visible in a single snap shot, this parameter allows you to specify that only the centre image within the imager framing marker be read. When this parameter is set to **ON**, the target dot is pointed at the centre image and only that image is returned.

Max Number Barcodes

Specifies the maximum number of bar codes the imager attempts to decode in an image. A maximum of 6 bar codes can be decoded at one time.

Barcodes Must Decode

Specifies the minimum number of bar codes that the imager must decode in order to report success.

Note: *This number must be less than the number of bar codes assigned to* Max Number Barcodes*. The driver validates and reassigns the value if necessary.*

Window Width

This parameter determines the width of the captured image in pixels.

Note: *The driver will validate and reassign the value assigned to this parameter, if necessary; the driver will also use the Window Width value to horizontally center the image in the field of view.*

Window Height

This parameter determines the height of the captured image in pixels.

Note: *The driver will validate and reassign the value assigned to this parameter,*

if necessary; the driver will also use Window Height value to vertically center the image in the field of view.

Dot Time (msec)

The value selected for *Dot Time (msec)* determines (in milliseconds) how long the targeting dot remains on before the scanner begins capturing images. When you double-tap on this parameter, a dialog box is displayed in which you can enter a value of between 0 and 3000. A value of 0 disables the target dot.

5.11.4.2 Advanced Options

Important: ***Do not adjust the advanced options without first consulting Psion Teklogix technical support.***

Factory Defaults On Reboot

Specifies if the driver will restore the factory defaults to the imager device on the next reboot—that is, a cold boot or warm boot.

Note: *The driver will default the imager device on a clean-cold-boot, regardless of the value of this parameter.*

Min Scan Duration

This parameter defines the minimum amount of time in seconds that the imager will scan when the trigger is pressed and held down. When the duration expires without a decode, the imager will stop scanning and a bad decode will be signaled.

Note: *The actual scan duration when the trigger is pressed relies on the value assigned to* Captures Per HW Trigger*, below.*

Captures Per HW Trigger

This parameter determines the number of images captured in each scan attempt. If the *Min Scan Duration* has not yet expired after the configured number of captures, and the scan button is still held down, the same number of images will be captured again. Once the *Min Scan Duration* time expires, and the configured number of images is captured and no bar code is decoded, a bad decode is signaled.

Auto Exposure

Important: ***This parameter value should only be changed by qualified Psion Teklogix personnel. It should be left at the default value, ON.***

Setting this parameter to **on** allows the imager to make automatic gain, integration and illumination adjustments based on ambient light before capturing the bar code. If the adjustment is insufficient, further adjustments are made automatically before another image is captured.

Fast Converge

Note: *"Auto Exposure" must be set to 'on' in order for this parameter to function.*

Keep in mind that while this parameter can improve imager performance, "Fast Converge" increases battery power consumption.

Setting this parameter to **ON** speeds the "Auto Exposure" process. It allows the imager to rapidly snap a number of bar code capture attempts while finding ideal values for gain, integration and illumination.

Max Gain, Max Integration And Max Illumination

Important: ***These parameter values should only be changed by qualified Psion Teklogix personnel.***

These parameters represent internal values used by the 2D imager. The "Auto Exposure" parameter automatically adjusts the "Max Gain", "Max Integration" and "Max Illumination" parameters to produce the best bar code read. Keep in mind that "Auto Exposure" must be set to **ON** in order for these parameter values to be automatically adjusted.

Double-tapping on any of these parameters displays an associated dialog box in which an allowable range is displayed: Max Gain – 357 to 7920, Max Integration – 0 to 65535, Max Illumination – 0 to 7.

Decoder Timeout

The decoder is a set of algorithms that examine the image and attempt to find the bar codes, and then turn the pixels into data that the computer can use—this process takes time. 'Decoder Timeout' limits the amount of time the decoder will spend attempting to decode an image, and forces it to stop and grab a new image, which will probably be easier to decode.

Note: *When decoding multiple bar codes in one image, the value assigned to 'Decoder Timeout' should be increased to 200ms/extra bar code after the first.*

Adaptive Windowing

Adaptive Windowing is an advanced technique used to speed up bar code recognition in certain applications. The 'Adaptive Windowing' parameter automatically reduces the size of the window to the user-programmed window size when it successfully decodes (which reduces decode time the next time it is used), but increases it to the full size window (1024x1024 for SX5393) on a failed decode.

Note: *This feature assumes that you have reached an understanding about how the device operates in your application, and that, after a learning period, operators will get used to using the imager in one particular way. It also assumes that a trained operator will usually only have near miss scenarios.*

Constant Illumination

Constant Illumination is used to reduce the intrusiveness of the device's illumination on the observer. Instead of the illumination turning on and off every time the device attempts a decode (2-4 times per second), the illumination stays on from the time the trigger is pulled until a decode is successful. This feature is useful in low light environments, since it will also reduce the distraction that the illumination can have on nearby coworkers.

5.11.4.3 Code 39

Enabled

Set this parameter to **ON** to enable "Code 39".

Full ASCII

If this parameter is enabled, the characters +, %, and / are used as escape characters. The combination of an escape character and the next character is converted to an equivalent ASCII character.

Check Digit Verification

When this parameter is enabled, the integrity of a "Code 39" symbol is checked to ensure that it complies with specified algorithms.

Note: *Only those "Code 39" symbols that include a MOD 43 check digit are decoded when this parameter is enabled.*

Include Check

If this parameter is enabled, the check digit is included with the decoded bar code data.

Field Size/Chars

Refer to page 170 for details.

5.11.4.4 Code 128

Enabled

Set this parameter to **ON** to enable "Code 128.

Field Size/Chars

Refer to page 170 for details.

5.11.4.5 EAN 13

Enabled

Set this parameter to **ON** to enable "EAN 13" or **OFF** to disable it.

Addendum

Important: ***Before "Addendum" can take effect, the*** "Short Code" ***parameter (see page 209) must be enabled.***

An addendum is a separate bar code, supplementary to the main bar code. This parameter provides three options: **Disabled, Optional** and **Required**. Depending on the value chosen for this parameter, an addendum is recognized or ignored.

- Double-tap on **Addendum** to display a dialog box listing your options.
- Highlight an item, and tap on **OK**.

When "Addendum" is set to **Disabled,** the scanner does not recognize an addendum. If this parameter is set to **Optional,** the scanner searches for an addendum and if one exists, appends it to the main bar code. When the parameter is set to **Required,** the scanner does not accept the main bar code without an addendum.

Note: *Setting* Addendum *to* **Optional** *will reduce performance. This value should only be used if some bar codes actually have addendums.*

Prefix/Suffix

See “Prefix/Suffix” beginning on page 172.

5.11.4.6 EAN 8

Enabled

Set this parameter to **ON** to enable “EAN 13” or **OFF** to disable it.

Addendum

Refer to “Addendum” on page 201 for details.

Prefix/Suffix

See “Prefix/Suffix” beginning on page 172.

5.11.4.7 UPC A

Enabled

Set this parameter to **ON** to enable “UPC A”.

Addendum

Refer to “Addendum” on page 201 for details.

Prefix/Suffix

See “Prefix/Suffix” beginning on page 172.

5.11.4.8 UPC E

Enabled

Set this parameter to **ON** to enable “UPC E”.

Addendum

Refer to “Addendum” on page 201 for details.

Prefix/Suffix

See “Prefix/Suffix” beginning on page 172.

5.11.4.9 Code 93

Enabled

Set this parameter to **ON** to enable "Code 93".

Field Size/Char

Refer to page 170 for details.

5.11.4.10 Codabar

Enabled

Set this parameter to **ON** to enable "Codabar".

Field Size/Char

Refer to page 170 for details.

5.11.4.11 Interleaved 2 of 5

Enabled

Set this parameter to **ON** to enable "Interleaved 2 of 5".

Check Digit Verification

When set to **ON**, this parameter checks the integrity of an I 2 of 5 symbol to ensure it complies with a specified algorithm.

Include Check

If this parameter is enabled, the check digit is included with the decoded bar code data.

Field Size/Chars

Refer to page 170 for details.

5.11.4.12 RSS Code

Enabled

Set this parameter to **ON** to enable "RSS Code".

Field Size/Chars

Refer to page 170 for details.

5.11.4.13 Composite

A composite symbol includes multi-row 2D components making it compatible with linear and area CCD scanners along with linear and rastering laser scanners.

Enabled

Set this parameter to **ON** to enable "Composite" bar code scanner.

Important: ***To successfully read this type of bar code, the two types of symbologies included in the composite must be enabled. In addition,* Center Barcode Only *must be disabled (see page 197).***

5.11.4.14 PDF-417

Enabled

Set this parameter to **ON** to enable "PDF-417".

Field Size/Chars

Refer to page 170 for details.

5.11.4.15 Micro PDF-417

Enabled

Set this parameter to **ON** to enable "Micro PDF-417".

Field Size/Chars

Refer to page 170 for details.

5.11.4.16 2D Data Matrix

Enabled

Set this parameter to **ON** to enable "2D Data Matrix".

Inverse Video Mode

Enabling this parameter allows the imager to read inverse bar codes – white symbols presented on a black background.

Rectangular

Enabling this parameter allows the imager to recognize rectangular (as opposed to square) symbols.

Small Physical Size

Enabling this parameter ensures that the imager detects symbologies that are reduced in size or feature. This is a more exhaustive image processing search—turning it off decreases the response time (i.e. less processing, faster decode) especially if there are a lot of pictures in the image. However, images are normally clean (labels with only text, barcodes, and whitespace) and the effect of having the parameter on or off is negligible. The default value is **ON**.

Field Size/Chars

Refer to page 170 for details.

5.11.4.17 2D QR Code

Enabled

Set this parameter to **ON** to enable "2D QR Code".

Inverse Video Mode

Enabling this parameter allows the imager to read inverse bar codes—white symbols presented on a black background.

Field Size/Chars

Refer to page 170 for details.

5.11.4.18 2D Maxicode

Enabled

Set this parameter to **ON** to enable "2D Maxicode".

Field Size/Chars

Refer to page 170 for details.

5.11.4.19 2D Aztec

Enabled

Set this parameter to **ON** to enable "Aztec".

Field Size/Chars

Refer to page 170 for details.

5.11.4.20 Postal: PlaNET

Enabled

Set this parameter to **ON** to enable "Postal: PlaNET".

Field Size/Chars

Refer to page 170 for details.

5.11.4.21 Postal: PostNET

Enabled

Set this parameter to **ON** to enable "Postal: PostNET".

Field Size/Chars

Refer to page 170 for details.

5.11.4.22 Postal: Australian

Enabled

Set this parameter to **ON** to enable "Postal: Australian".

Field Size/Chars

Refer to page 170 for details.

5.11.4.23 Postal: Japanese

Enabled

Set this parameter to **ON** to enable "Postal: Japanese".

Field Size/Chars

Refer to page 170 for details.

5.11.4.24 Postal: Korean

Enabled

Set this parameter to **ON** to enable “Postal: Korean”.

Field Size/Chars

Refer to page 170 for details.

5.11.4.25 Postal: Royal

Enabled

Set this parameter to **ON** to enable “Postal: Royal”.

Field Size/Chars

Refer to page 170 for details.

5.11.4.26 Postal: Kix

Enabled

Set this parameter to *on* to enable “Postal: Kix”.

Field Size/Chars

Refer to page 170 for details.

5.11.4.27 Postal: Canadian

Enabled

Set this parameter to *on* to enable “Postal: Canadian”.

Field Size/Chars

Refer to page 170 for details.

5.11.5 Non-Decoded Scanners

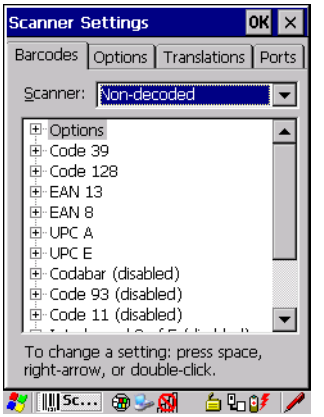

Figure 5.76 Non-Decoded Scanner Options

- Tap on the *Scanner* drop-down menu, and choose **Non-decoded**.

All the available bar code symbologies for this type of scanner can be selected in this tab.

A 'plus' sign (+) to the left of the menu item indicates that a sub-menu of parameters is attached.

- Tap the stylus on the + sign to display the sub-menu.
- To change a parameter value, double-tap on the parameter. If you need to type a value, a dialog box is displayed in which you can type a new value. If you need to change a *yes* or *no* value, double-tapping on the parameter toggles between *yes* and *no*.

If you're using the keyboard:

- Highlight the bar code you want to work with, and press the [RIGHT] arrow key to display the sub-menu.
- Use the [UP] and [DOWN] arrow keys to highlight a parameter.
- To change a parameter value, press [SPACE] *or* the [RIGHT] arrow key. If a field requires text entry, a text box is displayed in which you can enter the appropriate value.

5.11.5.1 Options

- Tap the stylus on the + sign next to *Options* to display these parameters.

Dot Time (msec)

The value selected for "Dot Time (msec)" determines (in milliseconds) how long the targeting dot remains on before the scanner switches to a normal scan sweep. When you double-tap on this parameter, a dialog box is displayed in which you can enter a value from 0 to 3000. A value of **0** (zero) disables the target dot.

Short Code

When enabled, this parameter allows scanning of short I 2 of 5 bar codes (2 characters). When disabled, these short bar codes are rejected.

Enabling "Short Code" may reduce the robustness of the decoding since the hand-held must decode more potential bar codes; it is therefore not recommended for general-purpose bar codes with 4 or more characters.

Verify

The value entered for this parameter determines the number of correct additional decodes required *after* the initial decode, prior to a bar code being accepted. Higher values significantly increase the time it takes to decode a bar code but also improve the reliability of the decoded bar code.

Security

This parameter controls the tolerance for decoding edge-to-edge bar codes (Code 93, Code 128, UPC/EAN). Lower values have a lower tolerance for misreads, but they also increase the time it takes to decode the bar code. The default value of **30** is generally a good compromise setting.

5.11.5.2 Code 39

Enabled

Set this parameter to **ON** to enable "Code 39" or **OFF** to disable it.

Full ASCII

If this parameter is enabled, the characters +, %, and / are used as escape characters. The combination of an escape character and the next character is converted to an equivalent ASCII character.

Include Check

If this parameter is enabled, the check digit is included with the decoded bar code data.

AIAG Strip

If this parameter is enabled, the AIAG data identifier is removed from each decoded Code 39 label. The data identifier occurs in the first position next to the Code 39 start character. It can be a single alphabetic character or a series of numeric digits followed by an alphabetic character. This identifier defines the general category or specific use of the data contained in the rest of the bar code.

Note: *If your unit is operating with the Psion Teklogix TESS application, this parameter should* ***not*** *be used in conjunction with the TESS AIAG feature. This is because the hand-held performs the strip function before it processes the data through the AIAG feature; if the prefix is stripped, the data is not identified as AIAG.*

Error Accept

If the "Err Accept" and "AIAG Strip" parameters are enabled, all label data without an AIAG identifier character is accepted. If the "Err Accept" parameter is disabled and the "AIAG Strip" parameter is enabled, the label data is not accepted.

MOD Checks

This parameter allows you to choose the check digit calculated: MOD 43 Check, MOD 10 Check or None.

- Double-tap on **MOD Checks** to display your options.
- Tap on a check digit to highlight it, and tap on **OK**.

If you choose **None**, a check is not executed.

Transmit Code ID Char

A code ID character identifies the scanned bar code type. In addition to any single character prefix already selected, the code ID character is inserted between the prefix and the decoded symbol.

Field Size/Chars

Refer to page 170 for details.

5.11.5.3 Code 128

Enabled

Set this parameter to **ON** to enable "Code 128" or **OFF** to disable it.

Include Sym

Setting "Include Sym" to **ON** causes the group separator(s) and start code contained in this type of bar code to be displayed on the screen.

Note: *This option is available only when 'EAN/UCC 128' is selected.*

Variations

When using Code 128, you can choose the bar code variation the scanner will recognize. The options available are Standard, UCC 128 and EAN/UCC 128.

- Double-tap on **Variations** to display a dialog box listing your options.
- Tap on a variation to highlight it, and then tap on **OK**.

If you choose **None**, a check is not executed.

Standard

Enable **Standard** if "Code 128" is desired.

UCC 128

UCC 128 is a variation of "Code 128".

EAN/UCC 128

To successfully scan this type of bar code, "EAN/UCC 128" must be enabled. "EAN/UCC" bar codes include group separators and start codes.

Transmit Code ID Char

A code ID character identifies the scanned bar code type. In addition to any single character prefix already selected, the code ID character is inserted between the prefix and the decoded symbol.

Field Size/Chars

Refer to page 170 for details.

5.11.5.4 EAN 13

Enabled

Set this parameter to **ON** to enable "EAN 13" or **OFF** to disable it.

Enable Bookland EAN

Setting this parameter to ON allows your scanner to recognize Bookland EAN bar codes.

Include Country

If this parameter is enabled, the country code is included with the decoded bar code data.

Include Check

If this parameter is enabled, the check digit is included with the decoded bar code data.

Addendum

Important: ***Before "Addendum" can take effect, the*** "Short Code" ***parameter (see page 209) must be enabled.***

An addendum is a separate bar code, supplementary to the main bar code. This parameter provides three options: **Disabled, Optional** and **Required**. Depending on the value chosen for this parameter, an addendum is recognized or ignored.

- Double-tap on **Addendum** to display a dialog box listing your options.
- Highlight an item, and tap on **OK**.

When "Addendum" is set to **Disabled,** the scanner does not recognize an addendum. If this parameter is set to **Optional,** the scanner searches for an addendum and if one exists, appends it to the main bar code. When the parameter is set to **Required,** the scanner does not accept the main bar code without an addendum.

Note: *Setting* Addendum *to* **Optional** *will reduce performance. This value should only be used if some bar codes actually have addendums.*

Transmit Code ID Char

A code ID character identifies the scanned bar code type. In addition to any single character prefix already selected, the code ID character is inserted between the prefix and the decoded symbol.

Prefix/Suffix

See “Prefix/Suffix” beginning on page 172.

5.11.5.5 EAN 8

Enabled

Set this parameter to **ON** to enable “EAN 8” or **OFF** to disable it.

Include Check

If this parameter is enabled, the check digit is included with the decoded bar code data.

Addendum

Important: ***Before “Addendum” can take effect, the*** “Short Code” ***parameter (see page 209) must be enabled.***

See “Addendum” on page 212.

Transmit Code ID Char

A code ID character identifies the scanned bar code type. In addition to any single character prefix already selected, the code ID character is inserted between the prefix and the decoded symbol.

Prefix/Suffix

See “Prefix/Suffix” beginning on page 172.

5.11.5.6 UPC A

Enabled

Set this parameter to **ON** to enable “UPC A”.

Include Number Sys

If this parameter is enabled, the number system digit is included with the decoded bar code data.

Include Check

If this parameter is enabled, the check digit will be included with the decoded bar code data.

Addendum

Important: ***Before "Addendum" can take effect, the*** "Short Code" ***parameter (see page 209) must be enabled.***

Refer to "Addendum" on page 212.

Transmit Code ID Char

A code ID character identifies the scanned bar code type. In addition to any single character prefix already selected, the code ID character is inserted between the prefix and the decoded symbol.

Prefix/Suffix

See "Prefix/Suffix" beginning on page 172.

5.11.5.7 UPC E

Enabled

Set this parameter to **ON** to enable "UPC E".

Convert to UPC-A

Setting this parameter to **ON** results in a non-standard decoding that returns 12 digits from the 6 digit UPC E bar code.

Include Number Sys

If this parameter is enabled, the number system digit is included with the decoded bar code data.

Include Check

When enabled, the check digit is included with the decoded bar code data.

Addendum

Important: ***Before "Addendum" can take effect, the*** "Short Code" ***parameter (see page 209) must be enabled.***

Refer to "Addendum" on page 212.

Transmit Code ID Char

A code ID character identifies the scanned bar code type. In addition to any single character prefix already selected, the code ID character is inserted between the prefix and the decoded symbol.

Prefix/Suffix

See "Prefix/Suffix" beginning on page 172.

5.11.5.8 Codabar

Enabled

Set this parameter to **ON** to enable "Codabar" or **OFF** to disable it.

Strip Start/Stop Chars

Codabar uses the characters A, B, C, and D as start and stop characters. Thus, the first and last digits of a Codabar message must be A, B, C, or D, and the body of the message should not contain these characters. Setting this parameter to **ON** strips the start and stop characters from this bar code.

Transmit Code ID Char

A code ID character identifies the scanned bar code type. In addition to any single character prefix already selected, the code ID character is inserted between the prefix and the decoded symbol.

Field Size/Chars

Refer to page 170 for details.

5.11.5.9 Code 93

Enabled

Set this parameter to **ON** to enable "Code 93".

Transmit Code ID Char

A code ID character identifies the scanned bar code type. In addition to any single character prefix already selected, the code ID character is inserted between the prefix and the decoded symbol.

Field Size/Chars

Refer to page 170 for details.

5.11.5.10 Code 11

Enabled

Set this parameter to **ON** to enable "Code 11".

Include Check

If "Include Check" is enabled, the check digit is included with the decoded bar code data.

Check Digits

This parameter can be set to None, One Check Digit or Two Check Digits.

- Double-tap on this parameter to display a dialog box listing your options.
- Highlight the check digit you want to use, and tap on **OK**.

If this parameter set to **One Check Digit**, it is assumed that the last digit is a check digit.

If this parameter is set to **Two Check Digits**, it is assumed that the last two digits are check digits.

Transmit Code ID Char

A code ID character identifies the scanned bar code type. In addition to any single character prefix already selected, the code ID character is inserted between the prefix and the decoded symbol.

Field Size/Chars

Refer to page 170 for details.

5.11.5.11 Interleaved 2 of 5

Enabled

Set this parameter to **ON** to enable "Interleaved 2 of 5".

MOD 10 Check

If this parameter is enabled, the "MOD 10" check digit is calculated. This calculation is the same as the Code 39 MOD 10 check digit.

ITF Check

If this parameter is enabled, the ITF-14/16 MOD 10 check digit is calculated.

Include Check

If this parameter is enabled, the check digit is included with the decoded bar code data.

Transmit Code ID Char

A code ID character identifies the scanned bar code type. In addition to any single character prefix already selected, the code ID character is inserted between the prefix and the decoded symbol.

Field Size/Chars

Refer to page 170 for details.

5.11.5.12 MSI Plessey

Enabled

Set this parameter to **ON** to enable "MSI Plessey".

One Check Digit

If this parameter is enabled, it is assumed that the last digit is a check digit.

Include Check

If this parameter is enabled, the check digit is included with the decoded bar code data.

Transmit Code ID Char

A code ID character identifies the scanned bar code type. In addition to any single character prefix already selected, the code ID character is inserted between the prefix and the decoded symbol.

Field Size/Chars

Refer to page 170 for details.

5.11.5.13 Discrete 2 of 5

Enabled

Set this parameter to **ON** to enable "Discrete 2 of 5".

MOD 10 Check

If this parameter is enabled, the MOD 10 check digit is calculated. This calculation is the same as the Code 39 MOD 10 check digit.

ITF Check

If this parameter is enabled, the ITF-14/16 MOD 10 check digit is calculated.

Include Check

If this parameter is enabled, the check digit is included with the decoded bar code data.

Transmit Code ID Char

A code ID character identifies the scanned bar code type. In addition to any single character prefix already selected, the code ID character is inserted between the prefix and the decoded symbol.

Field Size/Chars

Refer to page 170 for details.

5.11.5.14 IATA 2 of 5

Enabled

Set this parameter to **ON** to enable "IATA 2 of 5".

MOD 10 Check

If this parameter is enabled, the MOD 10 check digit is calculated.

ITF Check

If this parameter is enabled, the ITF-14/16 MOD 10 check digit is calculated.

Include Check

If this parameter is enabled, the check digit is included with the decoded bar code data.

Transmit Code ID Char

A code ID character identifies the scanned bar code type. In addition to any single character prefix already selected, the code ID character is inserted between the prefix and the decoded symbol.

Field Size/Chars

Refer to page 170 for details.

5.11.6 Options

This tab allows you to tailor the double-click parameters and the display options associated with your scanner.

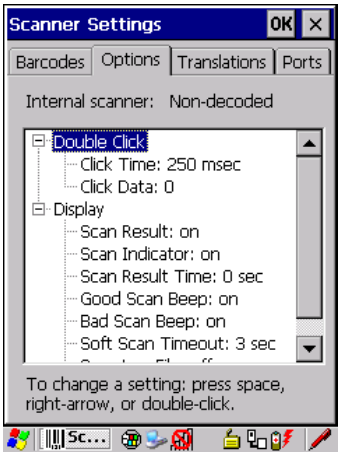

Figure 5.77 Options Tab

5.11.6.1 Double Click

Click Time (msec)

This parameter controls the maximum gap time (in milliseconds) for a double-click. If the time between the first and second clicks of the scanner trigger is within this time, it is considered a double-click. The allowable range is 0 to 1000. A value of zero disables this feature.

A double-click produces different results depending on whether or not a value is assigned in the "Click Data" parameter. When a value is ***not*** assigned for the "Click Data", double-clicking the scanner trigger overrides the target dot delay set in the "Dot Time" parameter and initiates a normal scan sweep. If a value ***is*** assigned for the "Click Data" parameter, double-clicking the scanner trigger inserts the "Click Data" value rather than initiating a scan.

Click Data

For both integrated and external scanners, this parameter determines which character is sent to the application installed in your 7535 G2 following a double-click. A dialog box appears, asking that you press the key you want to insert. The ASCII/Unicode key value of the keypress is displayed.

Pressing the [ESC] key in this dialog box resets the data to zero.

5.11.6.2 Display

Scan Result

When this parameter is enabled, the type of bar code and the result of the scan appear on the screen. Note that this information is only displayed after a successful decode and is visible only while the scanner trigger is pressed. When the trigger is released, this information is cleared from the screen.

Scan Indicator

When this parameter is enabled, the laser warning logo appears on the display whenever the scanner is activated.

Scan Result Time (sec)

The value assigned to the *Scan Result Time* parameter determines how long the scan results of a successful scan are displayed on the screen. Time is measured in seconds, and a value of **0** (zero) disables the parameter. When you choose this option, a dialog box appears where you can enter a value.

Note: *To remove the scan result from the screen before the "Result Time" has expired, point the scanner away from the bar code and press the trigger.*

Good Scan Beep And Bad Scan Beep

These parameters determine whether or not the 7535 G2 emits an audible scanner 'beep' when a good (successful) scan or a bad (unsuccessful) scan is performed. Set these parameters to either **ON** to enable the beeper or **OFF** to disable it.

Soft Scan Timeout

This parameter is used by the SDK "Scan" function (soft-scan: starting a scan session via the SDK function, instead of a physical user trigger press). The value assigned to this parameter determines the soft-scan timeout from 1 to 10 sec. (default is 3 sec.).

Scan Log File

If this parameter is enabled, the input bar code and the modified/translated output bar code are logged in the file \Flash Disk\ScanLog.txt. Keep in mind that if *Scan Log File* is enabled, there is a slight performance reduction when performing multiple scans since the log file is written to persistent storage.

5.11.7 Translations

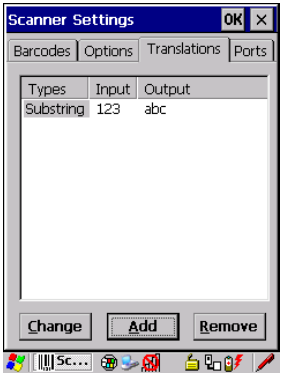

Figure 5.78 Translation Tab

- In the *Translation* tab, choose the **Add** button.

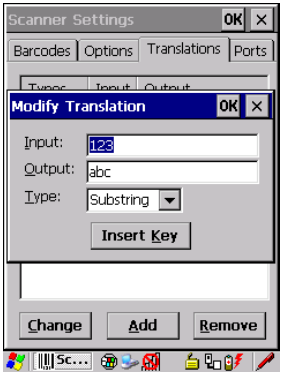

Figure 5.79 Translation Dialog Box

Input

This value is compared with the decoded bar code reading. If there is a match, the *Output* string replaces the data read from the bar code.

Output

If there is a match between the decoded bar code and the corresponding "Input" string, the decoded bar code will be translated into the "Output" string. This string entry parameter can be null, or it may contain any combination of standard and special characters (e.g., function keys, [ENTER], etc.).

Type

The value chosen from this drop-down menu determines what is compared with the decoded bar code reading: the beginning of decoded bar code, the end of decoded bar code, the entire decoded bar code or anywhere within the decoded bar code (default).

5.11.8 Ports

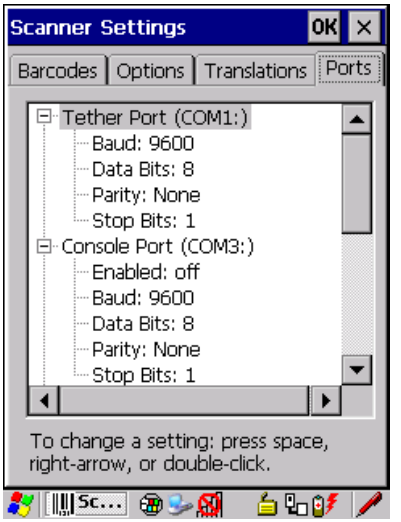

Figure 5.80 Tether, Console, and Port Replicator Port Settings

While you cannot configure the scanner, you can configure *communications* with a serial decoded scanner using the options in this tab.

Use these settings to ensure that the communication ports on the 7535 G2 match the settings of the serial devices to which they are connected. If the settings do not match exactly, the devices may not function. Note that some devices can auto-detect serial port settings (such as baud rate), and in this case the 7535 G2 will dictate the settings. Baud rates often have a direct impact on performance—they should be set as high as possible while still ensuring reliable communication.

5.11.8.1 Tether Port (COM1)

Notes: *RS-232 serial communication is one of the modes available on the tether port, located on the side of the 7535 G2.*

These parameters refer only to external decoded scanner communications. They have no effect if the generic serial device tether cable is plugged in.

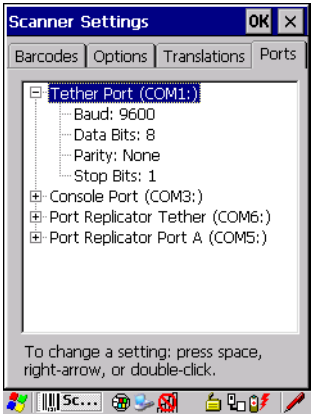

Figure 5.81 Tether Port Settings

Baud

Double-tapping on this parameter displays a pop-up window in which you can choose an appropriate rate of data transfer.

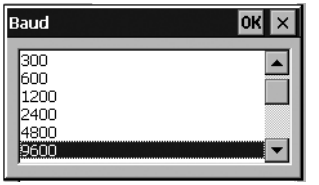

Figure 5.82 Tether Port Baud Rates

Data Bits

This parameter determines the number of data bits included in each asynchronous data byte. Most devices use 8-bit data bytes. Double-tapping on this option displays a pop-up window in which you can choose either 7 or 8 data bits.

Parity

This parameter determines the type of parity checking used on the data going through the tether port. Double-tapping on this option displays a pop-up window in which you can choose the appropriate Parity.

Figure 5.83 Parity Settings

Stop Bits

This parameter specifies the number of stop bits—1, 1.5 or 2—used for asynchronous communication.

5.11.8.2 Console Port (COM3)

The console port is accessed via the docking connector on the bottom of the 7535 G2. Only the Portable Docking Module (PDM) provides access to the console port through a DE-9 interface.

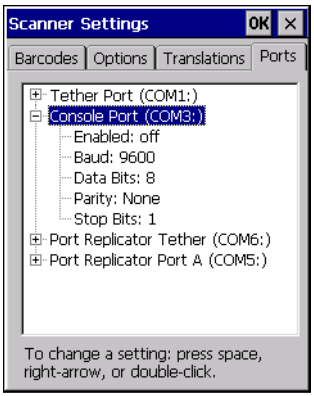

Figure 5.84 Console Port Settings

Enabled

This parameter must be set to **ON** in order for the 7535 G2 to recognize the attached device as a decoded bar code scanner.

Baud

Refer to page 224 for details.

Data Bits

Refer to page 224 for details about this parameter.

Parity

For details, refer to page 225.

Stop Bits

Refer to page 225 for details about “Stop Bits”.

5.11.8.3 Port Replicator Tether (COM6)

The port replicator tether is a duplicate tether port located on the port replicator module of the 7535 G2 cradles.

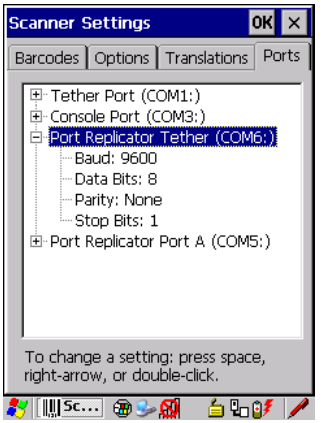

Figure 5.85 Port Replicator Tether Settings

Baud

Refer to page 224 for details.

Data Bits

Refer to page 224 for details about this parameter.

Parity

For details, refer to page 225.

Stop Bits

Refer to page 225 for details about “Stop Bits”.

5.11.8.4 Port Replicator 9-pin (COM5)

Port Replicator 9-pin (COM5) is the standard RS-232 DE-9 DTE port on the 7535 G2 port replicator module, available on certain cradle types.

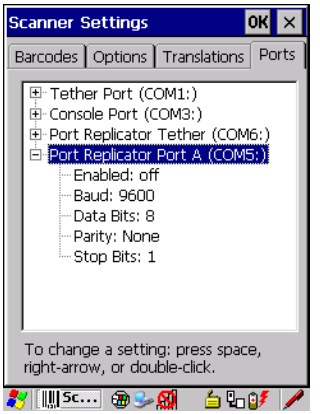

Figure 5.86 Port Replicator 9-Pin Settings

Enabled

This parameter must be set to **ON** in order for the 7535 G2 to recognize the device connected to the Port Replicator 9-pin (COM5).

Baud

Refer to page 224 for details.

Data Bits

Refer to page 224 for details about this parameter.

Parity

For details, refer to page 225.

Stop Bits

Refer to page 225 for details about “Stop Bits”.

5.12 SNMP (Simple Network Management Protocol) Setup

Simple Network Management Protocol (SNMP) is the protocol used to monitor and manage devices attached to a TCP/IP network (providing they support SNMP).

SNMP uses Management Information Bases (MIBs) that define the variables an SNMP Network Management Station can access. Each product has a defined set of MIBs that determine how SNMP operates, the type of access allowed and so on.

All Psion Teklogix products support the TEKLOGIX-GENERIC-MIB—a MIB that defines some common features across Psion Teklogix products.

All devices also support MIB-II, a management information base that defines the common features of TCP/IP networks. The SNMP Agent software embedded in the 7535 G2 product supports SNMPv1 (RFC 1157).

- In the *Control Panel*, choose the **SNMP** icon.

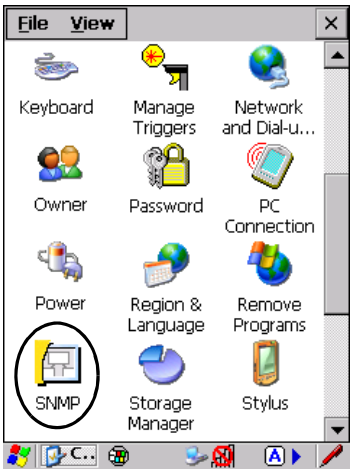

Figure 5.87 SNMP Icon

5.12.1 Contact Tab

The *SNMP* dialog box is displayed.

Figure 5.88 Contact Tab

Contact

This field identifies the contact person for this managed node along with information about how to get in touch with this person. The content of this parameter is accessible through MIB-II's sysContact object.

Location

This parameter is used to identify the physical location of this node (e.g., Warehouse A: Pillar 32B). The content of this parameter is accessible through MIB-II's sysLocation object.

5.12.2 Communities Tab

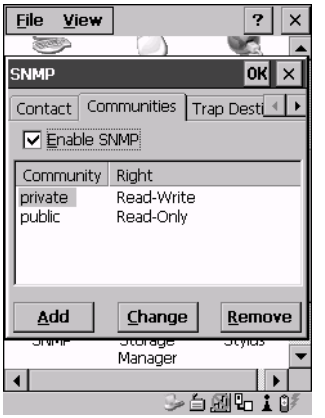

Figure 5.89 Community Settings

The *Communities* tab allows you to limit access to SNMP-managed devices to those SNMP Managers with matching "community names", as specified by RFC 1157.

Enable SNMP

Enabling **Enable SNMP** allows the device to respond to SNMP queries and to send Traps. After enabling this option and rebooting the device, the SNMP Agent will automatically start up. To disable this feature, remove the check mark from the check box.

5.12.2.1 Adding A Community

- Choose the **Add** button to add a new 'community'.

Figure 5.90 Adding A Community

Name

The value assigned here is the name assigned by the network administrator to the set of devices to which this managed node belongs.

Rights

This menu allows you to specify access, that is, 'Read-Only' or Read-Write'

5.12.2.2 Modifying A Community Setting

To modify an existing community:

- Highlight the community you want to alter.
- Choose the **Change** button.

Figure 5.91 Changing Or Removing A Community

A *Modify Community* dialog box is displayed, listing the community you highlighted.

- Edit the **Name** and/or **Rights**, and press [ENTER] to save your changes.

5.12.2.3 Removing An Existing Community

To remove an item:

- Highlight the community you want to remove in the *Communities* tab and then choose the **Remove** button.

A *Delete Confirmation* screen is displayed.

- To remove a community, choose the **Yes** button, *or*

  If you decide not to remove the community, choose the **No** button.

5.12.3 Trap Destination Tab

A trap is an unsolicited report sent to SNMP Managers by the SNMP Agent running on the managed node. This option allows you to define where the report will be sent.

Figure 5.92 Trap Destination Tab

5.12.3.1 Enabling Authentication TRAPS

Enabling **Enable Authentication TRAPS** allows authorization traps to be sent when a failure is detected (e.g., an SNMP message received with a bad community name).

5.12.3.2 Adding A Destination

To add a new destination:

- Choose the **Add** button.

Figure 5.93 Adding A Trap Destination

- Type a destination in the text box provided, and press [ENTER].

5.12.3.3 Changing A Destination

To change an existing trap destination:

- Highlight the destination you want to alter in the *Trap Destination* tab, and then choose the **Change** button.

A dialog box like the one displayed when you *add* a destination is displayed.

Figure 5.94 Changing A Destination

- Make the changes to the destination, and press [ENTER] to save the changes.

5.12.3.4 Removing A Trap Destination

To remove a trap destination:

- In the *Trap Destination* tab, highlight the destination you want to delete.
- Choose the **Remove** button.

A *Delete Confirmation* screen is displayed.

- To remove a destination, choose the **Yes** button, *or*

  If you decide not to remove the destination, choose the **No** button.

5.12.4 Permitted Hosts Tab

For security reasons, the Network Administrator may want to restrict SNMP-node access to a known sub-set of SNMP Managers. This tab lists the IP addresses of all the SNMP Managers which are allowed to monitor and manage this device. If no entries are listed, the device will accept SNMP queries from any host.

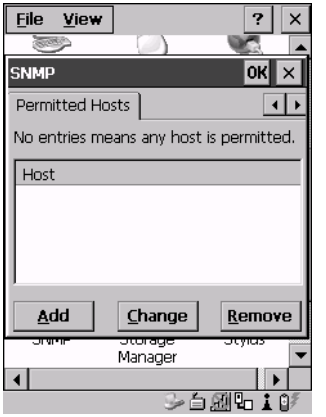

Figure 5.95 Permitted Hosts Tab

5.12.4.1 Adding A Host

To add a new host:

- Highlight the **Add** button, and press [ENTER].

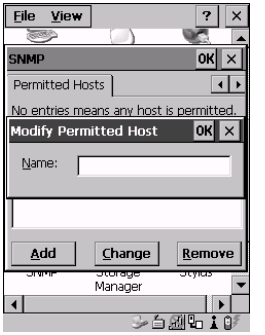

Figure 5.96 Adding A Host

- Type a new host IP address in the text box provided, and press [ENTER].

5.12.4.2 Changing A Host

To change an existing host IP address:

- Highlight the IP address you want to alter in the *Permitted Hosts* tab, and then choose the **Change** button.

A dialog box like the one displayed when you *add* a host is displayed.

- Make the necessary changes, and press [ENTER].

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6.1 External Bar Code Readers

6.1.1 PowerScan® Standard, LR and XLR Bar Code Scanners

Note: *Refer to* "PowerScan® Standard Range Scanner Specs" on page 281 *and* "PowerScan® LR and XLR Industrial Scanner Specs" on page 279 *for detailed specifications.*

The 7535 G2 supports Psion Teklogix' PowerScan® industrial bar code scanner with standard, long range and extra long range options.

To connect this scanner to the 7535 G2, attach the device to the tether port at the upper-right side of the 7535 G2. Before using the bar code reader, you may need to change some parameters (see "Non-Decoded Scanners" on page 208). Review your "Power Scan Programing Guide (PSC)" for details.

6.1.2 Entering Data With The Bar Code Reader

Note: *For helpful scanning tips, refer to* "Scanning Techniques" on page 69.

For external non-decoding scanners, when a label is scanned successfully, the 7535 G2 will beep if configured appropriately and the scan LED will flash. (Most external decoding scanners have their own indicators—some communicate with the unit.) Occasionally, the bar code labels are poorly printed or damaged and cannot be read properly. In this case, use the keyboard to enter data from the label.

6.2 RD7950 Integrated UHF RFID Reader

Note: *Refer to the RD7950 UHF RFID Reader Quick Reference Guide (P/N 8000056) for detailed information and specifications.*

The RD7950 UHF RFID Reader is an EPC-compliant RFID reader available for Psion Teklogix rugged hand-held computing devices. The RD7950 can be retrofitted to deployed Psion Teklogix products. Multimedia data capture capabilities are delivered by combining RFID with existing technologies such as laser bar code scanning or imaging.

6.3 Batteries

Note: *Battery specifications are detailed beginning on page 283.*

7535 G2s operate with Lithium-Ion batteries—a high capacity 1900 mAh battery pack. For detailed safety instructions, please see "Lithium-Ion Battery Safety Precautions" on page xxiv. For details on battery charging and installation, please see "Powering Up The 7535 G2" on page 13. For battery calibration and power settings, see "Power Management Properties" on page 124.

6.4 Battery Charging

Note: *Initially, new batteries that have been fully charged may indicate slightly less than 100% charge. No special conditioning is required. The full capacity of the battery will reach 100% after 5 charge cycles through the charger.*

It can take from 1.5 to 4 hours to charge a battery. The 7535 G2's intelligent charging system protects the battery from over-charging by terminating the charge process when the battery is at maximum capacity. See "Approvals And Safety Summary" on page xix, for important safety and operating instructions for battery chargers and AC/DC adaptors.

Important: ***To preserve battery integrity, the charger will proceed with a charge only when the battery temperature falls between 5° C and 39° C (41° F to 102° F). If the battery is too hot or cold, the battery status LED flashes yellow and the charge is suspended.***

6.4.1 Battery Gas Gauge Calibration

The gas gauge indicator on the hand-held system tray and in the Power Properties dialog has a typical accuracy of +/- 5% of nominal capacity. In order to keep this accuracy the gas gauge (which is stored in the battery pack) needs to be calibrated occasionally. Whenever the battery is fully discharged and then fully charged, the gas gauge becomes recalibrated. For most users the issue of gas gauge recalibration should be invisible.

If the battery is only partially discharged or partially charged, at least 40 times, the gas gauge will start to drift out of calibration. When this happens the gas gauge accuracy could decline to +/- 15% of nominal. A calibration cycle (full discharge / full charge) is needed to fully recalibrate the gas gauge. Even if the battery is never recalibrated, the gas gauge accuracy will not drop below +/- 20% of nominal.

A feature is built into the HU3006 gang charger and the HU3002/HU4002 Combo Charger/Dock which detects a battery that requires calibration and will fully discharge it and charge it—but only if the remaining capacity is less than 30% of a full charge. On the HU3006, only one of the six slots can perform a calibration cycle at any one time. This calibration cycle extends the overall charge time by up to 4 hours. A charger that is performing the initial discharge portion of a calibration cycle will flash its LED yellow at fast rate (a slow flashing yellow LED indicates the battery is outside of the charge temperature). The HU3002/HU4002 can also perform a calibration cycle on a battery installed on the hand-held, but this function can be disabled in the *Power Properties* dialog (see "Calibrate" on page 127).

It is not necessary to perform an initial calibration cycle on a brand new battery, although the gas gauge may have slightly less than +/- 5% accuracy.

It should be noted that as a battery ages its capacity declines, and this is shown on the gas gauge as an inability to charge the battery to 100%. The 100% setting corresponds to the nominal capacity of a new battery (as stated on the battery cover). A battery that cannot be charged beyond 70% of its nominal capacity is considered to be at its end of life.

6.5 Gang Charger

The HU3006 is designed to charge up to six 7535 G2 Lithium-Ion batteries at one time. Your charger is shipped with the appropriate IEC mains power cord. If the supplied power cord is incorrect for your country, contact Psion Teklogix for assistance (see Appendix A: "Support Services And Worldwide Offices").

Important: ***The gang charger is shipped with a user manual. It is critical that this manual be reviewed for additional information and updates.***

6.5.1 Installation

The gang charger can be wall mounted using the wall mount kit (HU3106) or it can be operated on a flat surface. Install the charger in an area that is free from excessive dirt, dust and contaminants. The ambient temperature must be in the range 5° C to 39° C (41° F to 102° F). The charger will not charge batteries outside of this temperature range. For maximum performance, it is recommended that the charger be operated at room temperature—a temperature range between 18° C to 25° C (64° F to 77° F).

The charger can consume up to 2A @ 120VAC or 1A @ 240VAC. Check to ensure

the mains circuit supplying the charger is adequate for this loading (especially if several chargers are being powered from the same circuit). After unpacking the unit:

- Visually check the charger for damage.
- Install the IEC power cord and apply power.

A green indicator in the lower-right indicates power is present. All charge indicators flash momentarily at powerup to indicate that the charger is ready for operation.

If you choose to wall mount the charger, follow the instructions packaged with the mounting bracket kit. Be sure to locate the charger in an area where there is no risk of injury to persons walking in the vicinity.

6.5.2 Operator Controls

The gang charger does not have operator controls or a power switch.

6.5.3 Charge Indicators

Each battery charge slot is equipped with a tri-coloured LED to indicate the charge status of the battery. When 7535 G2 batteries are inserted in the charger, the colour and behaviour of the LEDs associated with the charge wells in use indicate the status of the charge.

LED Behaviour	Icon	Charge Status
Off		No battery detected in the slot.
Solid green		Battery is fully charged.
Flashing green		Battery is charged to 75% capacity.
Solid yellow		Charge in progress.
Flashing yellow		Battery temperature out of charge range between 5° C to 39° C (41° F to 102° F). This icon indicates that the charger is waiting to charge. Charging is attempted every five minutes until the battery is within the appropriate temperature range.
Solid red		Battery rejected (at insertion) or unable to complete charge on battery
Flashing red		Charging circuit problem. Refer to “Troubleshooting” on page 243.

Table 6.1 Gang Charger Indicators

6.5.4 Charging Batteries

- Install the battery with the battery contacts facing the charger. Slide the battery between the guide rails until it lightly latches in place.

The LED directly below the slot in which a battery is inserted lights up immediately. A solid yellow LED indicates that the battery is being charged. If the battery temperature is outside 5° C to 39° C (41° F to 102° F), the LED flashes yellow until the temperature is acceptable. A fully discharged battery will normally take between 1.5 and 4 hours to charge. When the battery charge reaches 75%, the indicator flashes green. At full capacity, it turns solid green.

When the battery is fully charged, the charger stops applying power; the battery cannot be overcharged if left in the charger slot. The 75% charge indicator is handy if you need a quick recharge—it often occurs after less than an hour.

Storing batteries in the gang charger for extended periods (more than a week or two) is not recommended. Lithium-Ion batteries lose capacity if they are maintained at full charge for long periods of time. See the battery storage recommendations in “Storing Batteries” on page 75.

6.5.5 Troubleshooting

6.5.5.1 Excessive Charge Duration

The charger is equipped with a recalibration function—a function that fully discharges and then fully recharges the battery. This process is necessary to recalibrate the battery capacity gauge internal to the battery. The charger attempts recalibration when:

- the battery capacity is at less than 30%, and
- the battery has undergone more than 40 partial charge cycles since the last full discharge.

A complete battery discharge takes between 1.5 and 4 hours to complete. When in discharge mode, the LED indicator flashes yellow. The recalibration function extends the charge time by up to 2 hours.

6.5.5.2 Improper Battery Storage

Storing batteries in the gang charger for extended periods (more than a week or two) is not recommended. Lithium-Ion batteries lose capacity if they are maintained at full charge for long periods of time. See the battery storage recommendations in “Storing Batteries” on page 75.

6.5.5.3 Indicator Flashing Red

If the indicator flashes red:

- Remove all batteries and disconnect the mains power cable.
- Wait at least 20 seconds, and then plug the cable in again.

If any of the charge slot LEDs continue to flash red, the charger is defective and requires service. If all indicators are flashing red, there is a power supply problem and the charger requires service.

6.5.5.4 Power LED Does Not Light Up

- Remove all batteries, and unplug the charger.
- Connect another device to the mains outlet to ensure there is power.
- Remove the IEC mains power cable from the charger, and check it for damage.
- Reconnect the mains cable in the charger and mains outlet.

6.5.5.5 Indicator Does Not Light When Battery Installed

- Remove the battery, and clean the contacts on the battery and the charge slot.
- Reinstall the battery, and check that it is fully seated in the slot.
- Inspect the charge slot contacts for damage (are they bent, flattened, twisted or broken).
- Try inserting a battery that you know to be working in the charger slot.
- Reconnect the mains power cable, and check that the slot indicator flashes at powerup.

6.6 Combo Charger

The 7535 G2 combo charger is a desktop charger designed to charge the 7535 G2 internal battery along with a spare battery pack. The combo charger provides sufficient power to operate and fast charge the 7535 G2 internal battery, while recharging the spare battery pack.

Note: *The combo charger is shipped with a user manual. It is critical that this manual be reviewed for additional information and updates.*

6.6.1 Installation

Keep the combo charger away from excessive dirt, dust and contaminants. The combo charger will not charge batteries outside an ambient temperature range of 5° C to 39° C (41° F to 102° F). It is recommended that this charger be operated at room temperature between 18° C and 25° C (64° F to 77° F) for maximum performance.

After unpacking the unit:

- Visually inspect the charger for possible damage.
- Install the IEC power cord and apply power.

A green LED in the lower-right corner of the front panel lights to indicate that power is present. The charge LED flashes momentarily at powerup. The charger is now ready for operation.

6.6.2 Operator Controls

The combo charger has no operator controls or power switch.

6.6.3 Using the Combo Charger With The 7535 G2

- Gently slide the 7535 G2 into the cradle portion of the combo charger until lightly latched. An icon is displayed indicating that the 7535 G2 is properly installed in the combo charger .

The battery charge LED on the 7535 G2 lights up indicating that the unit has external power and battery charging may begin. It is safe to leave the 7535 G2 in the combo charger cradle while it is not in use—the battery will not be overcharged.

6.6.4 Charging The Spare Battery

- Install the battery with the latch facing towards the rear of the charger—slide it between the guide rails until it lightly latches in place.

The LED for the slot lights up immediately. A solid yellow LED indicates the battery is being charged. A flashing yellow LED indicates that the battery temperature is outside the acceptable charge range between 5° C and 39° C (41° F to 102° F).

A fully discharged battery normally takes between 1.5 and 4 hours to charge. When the battery capacity reaches 75%, the LED flashes green. When the battery is at full capacity, the indicator turns solid green.

The combo charger stops applying power to the battery when it is fully charged—there is no risk of overcharge if the battery remains in the charge slot (however, see ***Important*** note, below). The 75% charge indicator is handy if you need a quick recharge—a quick charge often takes less than one hour.

Important: ***The spare battery slot is not intended as a battery storage pocket. Storing batteries in the combo charger for extended periods (more than a week or two) is not recommended. Lithium-Ion batteries permanently lose capacity if they are maintained at full charge for long periods of time. See the battery storage recommendations in*** "Storing Batteries" on page 75**.**

6.6.5 Charge Indicators

The spare battery charge slot has an associated tri-colour LED indicator on the lower-right area of the front panel. The charge indicators are the same as those for the Gang Charger. For a description of the charger indicators, please refer to Table 6.1 on page 242.

The combo charger supplies DC power to enable the 7535 G2 internal fast charger. Charge status is displayed on the 7535 G2 charge LED (the lower-right LED). Refer to "Charge LED" on page 63 for details. All Charge LEDs (whether on the HU3006, HU3002, HU4002, or on the hand-held) function in exactly the same way.

Normally, it takes from 1.5 to 4.0 hours to fully charge the 7535 G2 internal battery.

Note: *Battery charging continues whether the 7535 G2 is switched on or off.*

6.6.6 Troubleshooting

The gang charger troubleshooting section also applies to the combo charger. Refer to "Troubleshooting" on page 243, for helpful tips.

6.7 Combo Dock

The combo dock is identical to the combo charger with one exception: the combo dock is equipped with a 10/100 BaseT Ethernet interface. The charging information in "Combo Charger" beginning on page 244 also applies to the combo dock.

6.7.1 Installation

Refer to the "Installation" guidelines for the combo charger beginning on page 245.

- Attach a CAT5 RJ45 network patch cable (shipped with the combo dock) between your network and the RJ45 jack on the rear of the dock.

A green LED is illuminated next to the RJ45 connector when a valid network link is established.

A user application needs to be loaded onto each 7535 G2 that utilizes the combo dock for communication. With the network connected and this application loaded, the combo dock is ready for use.

6.7.2 Using The Combo Dock

- Gently slide the 7535 G2 into the cradle portion of the combo dock until lightly latched. The 7535 G2 detects combo dock and displays the appropriate icon .

The battery charge LED (lower-right LED) on the 7535 G2 lights up to show it has external power and may start charging the battery.

Interaction with the 7535 G2 while in the combo dock is a function of the user application software used to communicate with the host network.

6.7.3 Network Access

The combo dock includes a dedicated USB to Ethernet converter. This USB converter appears as a USB slave to the 7535 G2 USB host controller. The 7535 G2 automatically detects insertion into a combo dock and loads the appropriate drivers to communicate with the USB/Ethernet converter.

See "Network Addressing" on page 249 for details about network addressing issues with the combo dock.

6.7.4 Troubleshooting

Troubleshooting issues for the combo dock are identical to those of the quad dock. Refer to "Troubleshooting" on page 249 for helpful tips.

6.8 Quad Dock

Note: *The quad dock is shipped with a user manual. It is critical that this manual be reviewed for additional information and updates.*

The Quad Dock permits each of four docked 7535 G2 hand-helds to communicate with a 10/100 BaseT Ethernet network at greater than 2Mbps. It also provides sufficient power to operate and fast charge the batteries in the 7535 G2s.

6.8.1 Installation

The quad dock should be located away from excessive dirt, dust and contaminants. The ambient temperature must fall between 5° C to 39 °C (41° F to 102° F). The 7535 G2 internal charger will not charge batteries outside of this temperature range. For maximum performance, it is recommended that the quad dock be operated at room temperature from 18° C to 25° C (64° F to 77° F).

The quad dock can consume up to 3A @ 120VAC or 1.5A @ 240VAC. Ensure that the mains circuit supplying the unit is adequate, especially if several docks are being powered from the same circuit.

After unpacking the unit:

- Visually inspect the unit for any damage.
- Install the IEC power cord and apply power.

A green indicator in the lower-right corner of the front panel lights up to indicate that power is present.

- Attach a CAT5 RJ45 network patch cable (supplied) between your network and the RJ45 jack on the rear of the dock.

A green LED is illuminated next to the RJ45 connector when a valid network link is established.

A user application must be loaded onto each 7535 G2 that utilizes the quad dock for communication. When the network is connected and this application is loaded, the quad dock is ready for use.

6.8.2 Indicators And Controls

The quad dock has no user controls. It is equipped with a power indicator LED and RJ45 link and traffic indicator LEDs. When a valid network link is established, a green LED is illuminated next to the RJ45 connector.

6.8.3 Using The Quad Dock

- Gently slide the 7535 G2 into the cradle portion of the quad dock until lightly latched.

The 7535 G2 detects that it is in a quad dock and displays the appropriate icon in the taskbar . The battery charge LED on the 7535 G2 lights up to show it has external power and may start charging the battery.

Interaction with the 7535 G2 while in the quad dock is a function of the user application software used to communicate with the host network.

6.8.4 Network Access

The quad dock includes a four port 10/100 Ethernet hub. Each of the four downstream ports are connected to dedicated USB-to-Ethernet converters. These USB converters appear as USB slaves to the 7535 G2 USB host controller. The 7535 G2 automatically detects insertion into a quad dock and loads the appropriate drivers to communicate with the USB/Ethernet converters.

6.8.4.1 Network Addressing

Although the USB converters have fixed Ethernet MAC addresses, there is generally no correlation between these addresses and a specific 7535 G2 hand-held. The host application uses standard TCP/IP protocol to name, locate and communicate with a specific 7535 G2 on the network.

If a link is established between a hand-held and a host, the application on the host and on the 7535 G2 must have a recovery mechanism in the event that the hand-held is removed from the dock and the link is interrupted.

6.8.5 Battery Charging

The quad dock supplies DC power to enable the 7535 G2 internal fast charger. Charge status is displayed on the hand-held charge LED (see “Charge LED” on page 63). Battery charging continues whether the unit is switched on or off.

Normally, it takes between 1.5 and 4 hours to fully charge the 7535 G2 internal battery.

6.8.6 Troubleshooting

The indicators, applications and drivers required to use and monitor the docking station are installed on the 7535 G2—no indicators or applications are present on the docking station itself.

6.8.6.1 Network Link Unsuccessful

If a network link fails, the 7535 G2 application alerts the operator that the link was unsuccessful.

6.8.6.2 7535 G2 LED Does Not Light When Docked

- Check that the quad dock has power—is the Power LED on the quad dock illuminated?
- Try inserting the 7535 G2 in another slot in the quad dock.
- Check for dirt or contamination on the docking contacts at the bottom of the 7535 G2. Wipe the contacts with a damp cloth if necessary.
- Check the pogo pins inside the dock cradle for dirt. Gently wipe with a damp cloth if they appear to be dirty or discoloured.
- Check that the pogo pins are not bent or damaged.
- Remove and reinsert the 7535 G2 in the cradle—check that the latch is holding the unit in place (the pogo pins must be compressed for proper contact).
- Make certain that the battery installed in the 7535 G2 is not defective.

6.9 Portable Docking Module (PDM)

Warning: ***The mains power cord for the AC/DC adaptor shall comply with national safety regulations of the country where the equipment is to be sold.***

The Portable Docking Module (PDM) clips onto the base of the 7535 G2 and is most often used to charge the 7535 G2 battery when a desktop charger is not convenient. The PDM also offers additional communication ports, making it useful for upgrading software in the 7535 G2 from a USB-equipped laptop computer.

Figure 6.2 on page 252 illustrates the connectors on the PDM.

- Align the pins on the PDM with the connectors on the base of the 7535 G2.
- Gently snap the PDM into place on the base of the unit. Figure 6.1 on page 251 provides a visual representation of how to secure the PDM.

Note: *The latching mechanism on the PDM is designed for quick installation and release. It is not meant for heavy duty use. Psion Teklogix recommends using a powered cradle or combo charger in harsh environments.*

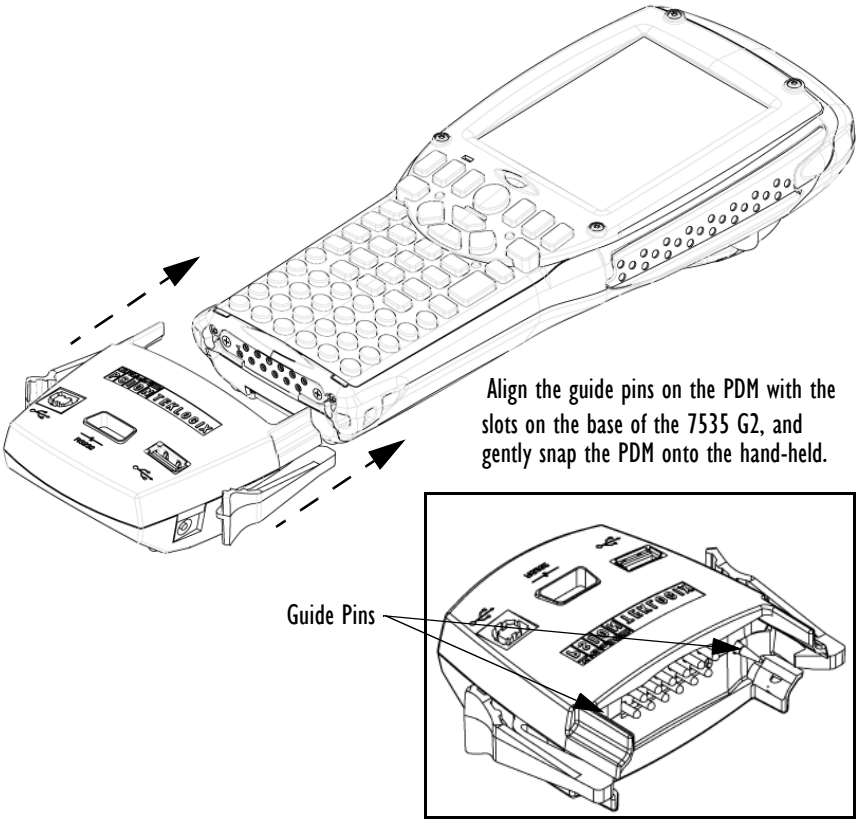
Align the guide pins on the PDM with the slots on the base of the 7535 G2, and gently snap the PDM onto the hand-held.
Guide Pins

Figure 6.1 Attaching The PDM To The Base Of The 7535 G2

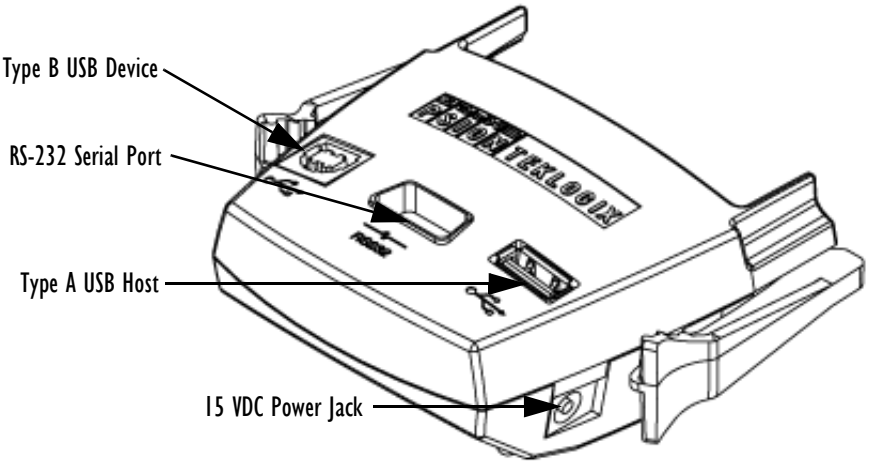

Figure 6.2 PDM Ports And Connectors

The interfaces available on the PDM are as follows:

- AC/DC adaptor jack (15VDC @ 2.5A).
- Type A USB host port (for connection to USB devices such as a mouse, keyboard, printer, etc.).
- Type B USB device port (for connection to a USB host such as a PC).

Note: *For information about data transfer with the Windows XP operating system and ActiveSync, and with the Vista operating system, refer to "Data Transfer Between The 7535 G2 And A PC" on page 44.*

- RS-232D DE9 serial port (for connection to a PC COM port or a serial device such as a printer).

The standard Psion Teklogix PDM kit (P/N HU4001) includes the necessary AC/DC adaptor, line cord, USB cables and RS-232D 9-pin cable.

The PDM contains reverse polarity and over voltage protection. If the AC/DC adaptor jack is wired backwards or exceeds 20VDC, the PDM shuts down to protect the 7535 G2, the PDM and the power supply from damage. Psion Teklogix does not recommend substituting the AC/DC adaptor provided with your PDM.

The power supplied by the PDM is sufficient to operate the 7535 G2 and fast charge its internal battery at the same time. The 7535 G2 can run from a PDM without a battery installed.

Important: ***Please see page iii-xxvi for AC/DC adaptor safety instructions.***

6.10 *Bluetooth* Peripherals

It is possible to communicate with a variety of *Bluetooth* peripherals, including GSM/GPRS handsets, scanners, printers, and so on. The range of the *Bluetooth* radio in the 7535 G2 is limited to approximately 10 meters (32 ft.). The *Bluetooth* antenna is located behind the scanner 'bulge' on the back of the hand-held.

Psion Teklogix provides built-in support for:

- *Bluetooth*-equipped cell phone.
- Serial Port Profile (SPP).
- Dial-up Networking Profile (DUN).
- File Transfer Profile (FTP).
- Human Interface Device (HID).
- LAN Access Profile (LAP).
- Object Push Profile (OPP).

Keep in mind that *Bluetooth* and IEEE 802.11g radios both operate in the 2.4GHz band. Although the 7535 G2 includes features to minimize interference, performance of the system will not be optimal if you use both radios simultaneously. Typically, when both radios operate in the 7535 G2 at the same time, they cannot transmit simultaneously—this has a negative impact on overall system throughput. To minimize the impact on the backbone 802.11 network, Psion Teklogix recommends using *Bluetooth* peripherals that have low transaction rates (such as printers and scanners).

Bluetooth peripherals are configured by choosing the *Bluetooth* icon in the *Control Panel*. Refer to "Bluetooth Setup" on page 136 for information about setting up your *Bluetooth* devices for communication. In addition, review the manual shipped with your *Bluetooth* device to determine the method used to associate with the 7535 G2 host.

6.11 The 7535 G2 Picker Cradle

The 7535 G2 picker cradle is a highly ruggedized, single station dock. Although it provides quick insertion and removal, the cradle holds the 7535 G2 securely even when operated in high vibration environments (such as vehicles not equipped with suspensions). The7535 G2 base picker cradle can be outfitted with two options: a power module and a port replicator. Psion Teklogix also supplies a range of standard mounts for the hand-held picker cradles, and the 7535 G2 picker cradle is compatible with all of them.

6.11.1 Picker Cradle Mounting Recommendations

Warning: ***Before mounting a picker cradle in a vehicle, there are a number of operator safety issues that require careful attention. An improperly mounted cradle may result in one or more of the following: operator injury, operator visibility obstruction, operator distraction and/or poor ease of egress for the operator. Psion Teklogix strongly recommends that you seek professional mounting advice from the vehicle manufacturer.***

Cable routing within a vehicle cab also requires careful consideration, especially for separately tethered scanners and other devices with loose cables. If you are unable to obtain suitable advice, contact Psion Teklogix for assistance (see Appendix A: "Support Services And Worldwide Offices"***). Note also that for better protection, the equipment should be mounted inside the vehicle roll cage.***

Pedestal mounts are recommended for all fixed mount locations because they offer optimal operator access. In addition, for safety reasons, only pedestal mounts with fully locking joints should be used in vehicles. Always adjust the pedestal for the optimum viewing angle, and securely tighten the hex and wing screws.

The most effective way to mount the picker cradle is to use the four #8-32 threaded inserts on the rear of the unit. Bolts must not extend more than 10mm (3/8") into the cradle.

To accommodate the service loop of the connector cable, leave a 4" clearance at the bottom of the cradle. Leave a 7" (minimum) clearance at the top of the cradle to allow easy removal of the hand-held. Also remember to leave at least a 3" clearance at the sides of the cradle to allow activation of the release knobs. Refer to the detailed assembly instructions that are packaged with the cradle when selecting a mounting location.

6.11.1.1 Mounting Template

The picker cradle is shipped with detailed mounting instructions including a drill template.

6.11.2 Wiring Guidelines

Before installing the cables between the cradle and other devices, consider the following:

- Ensure that drilling holes will not damage the vehicle or its wiring.
- Protect cable runs from pinching, overheating and physical damage.
- Use grommets to protect cables that pass through metal.
- Use plastic straps and tie-downs to secure cables and connectors in their desired location, away from areas where they may get snagged or pulled.
- Keep cables away from heat sources, grease, battery acid and other potential hazards.
- Keep cables away from control pedals and other moving parts that may damage the cables or interfere with the operation of the vehicle.

6.11.3 Using The Picker Cradle

If your 7535 G2 is equipped with a shoulder strap or cover, these accessories need to be removed before installing the unit in a picker cradle. There is no need to remove handstraps, pistol grips or tethered devices from the unit.

- Slide the 7535 G2 into the cradle, and press firmly downward until it locks into place. On a vehicle, it's a good idea to pull up on the 7535 G2 to be certain that it is secure.
- To remove the 7535 G2, press firmly on one of the knobs on either side of the cradle until it releases. You do not need to press both knobs.

6.11.4 Maintaining The Picker Cradle

Two latches in the cradle hold the 7535 G2 firmly in place. Although these latches are designed for at least 80,000 insertion and removal cycles, they will wear over time and will no longer lock the 7535 G2 securely in the cradle. For replacement parts and instructions contact Psion Teklogix (see Appendix A: "Support Services And Worldwide Offices"). Partial disassembly is required.

6.11.5 Powered Cradle Installation In High Voltage Vehicles

Warning: ***Voltages exceeding 60VDC are considered hazardous. For powered cradle installations on vehicles with batteries above this voltage, ensure the powered cradle power connector is mounted in a dry location on the vehicle, or that the connector is insulated with an appropriate waterproof material after installation. The connector must also be installed out of the vehicle operator's reach. Exposing an accessible power connector to water or other liquids could create a hazardous situation resulting in serious injury or death.***

Installation of powered cradles in vehicles that operate above 60VDC require special consideration.

Due to the hazardous voltages present on these vehicles, it is necessary to ensure that the powered cradle power supply cable connector is not accessible to the vehicle operator, and does not get exposed to water or other liquids. This can be accomplished in one of the following ways:

- Ensure the power connector is installed in a dry location on the vehicle, away from the vehicle operator's reach (perhaps under a vehicle dash or in a sealed housing).
- Cover the power connector with a waterproof heat shrink material (see "Extreme Wet Environments" below for additional details).
- Wrap the connector securely with a waterproof electrical tape in an area out of the vehicle operators reach.

All other installation requirements outlined in this document should also be followed for High Voltage vehicles to insure safe installation and operation of the powered cradle.

6.11.5.1 Extreme Wet Environments

For extreme wet environments, or environments where it is difficult to restrict vehicle operator access to the power connector, Psion Teklogix offers a waterproof heat shrink kit (P/N 1030022). The kit contains 3 pieces of waterproof, high shrink ratio heat shrink tubing which can be used to encapsulate the entire connector assembly. If using this kit, please ensure that you order sufficient material to cover installation and service, remembering that heat shrink is one-time use, and must be replaced if it is removed from the connector for any reason.

6.11.6 Powered Cradle Installation

The powered cradle option is designed to allow the 7535 G2 to be powered by a vehicle battery. The battery installed in the 7535 G2 is also recharged by the vehicle battery. This option accepts DC power sources over the range 12V to 80V.

The 7535 G2 picker cradle can be ordered with the powered cradle option installed, or it can be retrofitted later at an authorized Psion Teklogix service depot. Service offices are listed in Appendix A: “Support Services And Worldwide Offices”.

The 7535 G2 charging LED (see “Charge LED” on page 63) indicates that external power is available, and it also indicates the charging status of the internal battery.

Warnings: ***Applying a voltage above 90VDC or reversing polarity may result in permanent damage to the cradle power option and will void the product warranty.***

TO AVOID ELECTRIC SHOCK when the powered cradle option is installed, always ensure that the rear panel ground lug on the picker cradle is connected to the vehicle chassis. Failure to do this could result in serious injury or death.

The metal chassis of the picker cradle must be connected directly to the chassis of the vehicle. A safety ground lug (clearly labelled on the rear of the cradle chassis) is provided for this purpose. The grounding strap must connect from the ground stud on the picker cradle to a solid, reliable contact point on the main portion of the vehicle chassis. It must *not* be connected to battery negative or a terminal block. This grounding strap ensures that if there is a fault in the vehicle wiring or in the picker cradle power module, the picker cradle cannot be at a hazardous voltage with respect to the vehicle chassis.

Connection between the picker cradle ground lug and the vehicle chassis should be done with a 16 gauge ground strap (ground wire). Connect the ground strap to the picker cradle utilizing the ground lug hardware supplied with the picker cradle and a #10 heavy duty wire crimp ring terminal. Torque the ground lug hardware to 23.0 +/- 2.0 in-lbs. Connect the other end of the ground strap to a solid, reliable point on the main portion of the vehicle chassis, ensuring a solid electrical connection.

As with other vehicle cables, the routing of the ground strap should be carefully considered to ensure it does not pose a hazard to the operator or the safe operation of the vehicle. If necessary, secure the ground strap with cable ties or some other mechanical means to prevent loops or loose lengths of wire that could catch on stationary items when the vehicle is in motion.

6.11.6.1 Wiring Vehicle Power To The Cradle

A 1.8 meter (6 foot) extension power cable (P/N 13985-302 or 13985-301) is supplied with your power cradle. This cable should be wired to a filtered, fused (maximum 10A) accessory supply on the vehicle. The power cradle draws no more than 8A (less if the accessory supply is greater than 12V). Any additional wiring, connectors or disconnects used should be rated for at least 10A.

Note: *When connecting P/N 13985-301 (Screen Blanking version), ensure that the screen blanking wires (clearly labelled) and the power wires (red/black leads) are reliably secured away from each other, or are separated with reliably secured certified insulation. A minimum 2.8mm distance, or 0.4mm distance through insulation, is required for the separation.*

The red lead of the power cable attaches to the positive vehicle supply. The black lead connects to the negative supply—this should be connected to a proper terminal block and not to the vehicle body. The power cradle is fully isolated and can be used with both negative and positive chassis vehicles.

You may have the option of connecting power before or after the 'key' switch. It is preferable to wire the power cradle *after* the key switch—that is, it cannot be turned on without the key on. However, if the operator switches the key off repeatedly for long periods during a shift, it may make more sense to wire the cradle *before* the switch.

Keep in mind that the 7535 G2 will continue to operate with or without vehicle power as long as its battery has sufficient charge. If an unfused power source must be used, a fuse assembly (P/N 19440-300) must be added to the extension power cable (the fuse and instructions are supplied with the cable). Use only a 10A slow blow UL approved fuse in the fuse assembly.

6.11.7 The Port Replicator

The port replicator is an optional accessory that allows tethered devices (e.g., scanners) as well as mounted peripherals (e.g., bar code printers or weigh scales) to be attached to the picker cradle. The replicator can be used with or without the cradle power option. The functionality of the 7535 G2 tether port is duplicated on the port replicator. In addition to the tether port, the replicator is equipped with a standard 9 pin RS-232D serial interface. This interface is typically used for fixed peripherals such as printers. Your serial device likely includes a suitable cable connector for this port.

Note: *The 7535 G2 picker cradle can be ordered with the port replicator option installed, or it can be retrofitted later by an authorized Psion Teklogix ser-*

vice depot. Service offices are listed in Appendix A: “Support Services And Worldwide Offices”.

6.12 Tether Adaptor Cables

The following generic interface tether cables are available in addition to the dedicated cables provided for external scanners as described in “External Bar Code Readers” on page 239:

- CA1010 JB5 to DE9 RS-232 Serial Cable: Straight through wiring.
- CA1015 JB5 to DE9 RS-232 Serial Cable: Null modem (signal lines are crossed-over).
- CA1020 JB5 to Type B USB: Connects to USB devices with Type B receptacles.

For the pinout diagrams for 7535 G2 cables P/N CA1020 and P/N CA1010, please see Appendix B: “Port Pinouts”, page B-5.

Special intermediate cabling assemblies are available to allow older devices or unique peripherals to be connected to the JB5 tether port. These cabling assemblies permit scanner cables to be re-terminated in an intermediate in-line connector (called LTW), which then interfaces to one of a number of standard adaptor cables with JB5 terminations.

These kits include assembly instructions and the mating connector.

- 1002162 Cable Adaptor LTW - JB5 Scan Decoded.
- 1002163 Cable Adaptor LTW - JB5 Scan Undecoded.
- 1002164 Cable Adaptor LTW - JB5 Scan RS-232.
- 1002165 Cable Adaptor LTW - JB5 Scan RFID.
- 1002166 Cable Adaptor LTW - JB5 Scan USB.

Contact Psion Teklogix support services (see Appendix A: “Support Services And Worldwide Offices”) for assistance in the creation of these cable assemblies if you wish to take advantage of this capability.

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Note: Performance specifications are nominal and subject to change without notice.

7.1 7535 G2 Hand-Held Computer Specifications

Size

- 102mm (4") width x 62.5mm (2.5") depth x 260mm (10.2") length.
- Keypad area: 75.5mm (3") width x 35mm (1.4") depth.

Weight

With battery	710g (25 oz.)
With pistol grip	add 95g (3.4 oz.)

Operating System

Microsoft® Windows® CE 5.0

Processor And Memory

- XScale PXA270 @ 520 MHz Processor.
- RAM: 128MB SDRAM standard.
- Flash ROM: 64MB FLASH standard.

Power

- 7.4V @ 1.9Ah Li-ion rechargeable battery.
- Intelligent fast charge.
- 8-hour battery operation (5 scans, transmit & receive/min.).
- Built-in gas gauge & performance monitor.
- Quick swap battery packs.
- Built-in fast charger (2 hour typical recharge).
- Self-guiding & latching battery pack design.
- System backup (more than 10 minutes) during battery swap.
- Adjustable battery allocation between system backup and runtime.
- 1 week real-time clock backup.

Communication

Ports:	One tether port (optional) with: - one RS-232 serial port (decoded scanner, printer) - one undecoded scanner port - one USB host port - Power out, 5 VDC @ 1.0 A nominal One docking station port with: - one RS-232 serial port including diagnostics - one USB device port - one USB host port - Power in, 15 VDC nominal, 10 VDC to 19 VDC, 3.5 A maximum - Power out, 5 VDC +/- 5% @ 1.0 A nominal, 1.5 A peak

Environmental

Guaranteed Operating Temperature Range:	0°C to +50°C (32°F to 122°F) Long exposure to temperatures below -40°C (-40°F) may damage the screen and main battery. Prolonged exposure to temperatures above +60°C (+140°F) will damage the main battery and temperatures above +70°C (+158°F) may damage the unit.
Storage Temperature:	-25°C to +60°C (-13°F to 140°F)
Rain And Dust Resistance:	IEC 529, classification IP65.
Humidity:	5% - 95% RH non-condensing
Drop Durability:	Multiple 1.5m (5 ft.) drops to polished concrete. *Cradle shock:* IEC 60068-2-27: Test Ea, 300 m/s^2, 11ms, half-sine, 3 shocks in each of 6 directions. *Cradle vibration:* IEC 60068-2-64: Test Fh, Random, 3 axis, 100 min/axis; 5.0 m^2/s^3 ASD, 10 - 200 Hz; 1.0 m^2/s^3 ASD, 200 - 500 Hz.

Approvals

Safety:	UL 1950-1, CSA C22.2 No950, LVD EN60950
EMC:	FCC Part 15 Class B, EMC Directive Class B
Laser:	IEC 60825-1:1993+A1:1997+A2:2001 Class 2 CDRH 21 CFR 1040 Class II

7.2 Radio Specifications

Model RA2040: 802.11g Direct Sequence Spread Spectrum (DSSS) And Orthogonal Frequency Division Multiplexing (OFDM)

Form factor	Compact Flash Type II extended
Antenna port	Single U.FL jack, no diversity
Transmit Power	32mW maximum (+15dBm), all versions
Frequency Range	2.400 - 2.4835 GHz
Channels	USA, Canada:1-11 EU countries: 1-13
RX Sensitivity	(8% FER, 1024 bytes packet) = -89dBm @ 1 Mbps, -87dBm @ 11 Mbps, -83dBm @ 6 Mbps, -72dBm @ 54 Mbps
Data Rates	802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11b: 1, 2, 5.5, 11 Mbps

Model RA2041: 802.11g Direct Sequence Spread Spectrum (DSSS)

Form factor	Compact Flash Type I extended
Antenna port	Two Hirose U.FL connectors for antenna diversity
Transmit Power	802.11g: 32mW maximum (+15 dBm) 802.11b: 80mW maximum (+19 dBm)
Frequency Range	2.400 - 2.4897 GHz

Channels	FCC: 11 ETSI: 13 TELEC: 13
RX Sensitivity	-96dBm @ 1Mbps, -90dBm @ 11Mbps, -94dBm @ 6Mbps, -75dBm @ 54Mbps
Data Rates	802.11g: 6, 9, 12, 18, 24, 36, 48, 54Mbps 802.11b: 1, 2, 5.5, 11 Mbps

Bluetooth Radio

Embedded (USB interface)

Bluetooth Version	1.2 compliant (features Adaptive Frequency Hopping for better co-existence with 802.11 radio)
Chip Antenna	2dBi peak
Transmit Power	-3dBm (0.5mW) minimum, +4dBm (2.5mW) max
Frequency Range	2.400 - 2.4835 GHz
RX Sensitivity (BER<=0.1%)	-80dBm max
Data Rate	732.2 kbps and 57.6 kbps asymmetric, 433.9 kbps symmetric

7.3 Internal Scanner Port

Compatibility

1D Laser Scanners: SE1200HP non-decoded, standard range bar code scanner
SE1200LR non-decoded, long range bar code scanner
SE1200ALR non-decoded, advanced long range bar code scanner
SE1224HP decoded, fuzzy logic, standard range bar code scanner
SE1524ER decoded, fuzzy logic, auto-ranging bar code scanner

1D Imagers: EV15, linear, short range

2D Laser Scanner: SE2223 2D decoded PDF417 raster

2D Imagers: SX5400 Imager

7.4 RFID Applications

- RD7950 Integrated UHF RFID Reader
  - Psion Teklogix RFID File System
  - Multi-protocol support

7.5 External Scanners

Supported Types	Decoded and Non-Decoded 5V only.
Interface	Via tether port.

7.6 Internal Scanner Specifications

This section lists specifications for the following internal scanners:

- EV15 (page 268).
- SE1200 High Performance and Long Range (page 270).
- SE1200 Advanced Long Range and SE2223PDF (page 271).
- SE1224 High Performance (page 273).
- SE1524 Extended Range (page 275).
- SX5400 Imager (page 277).

7.6.1 EV15 Scanner Specifications

Parameter	EV15
Type	Imager LED Class 1
Light Source	617nm Highly Visible LED
Scan Rate	Decoded operation = 500 scans/s auto-adaptive Undecoded operation = 200 scans/s
Scan Angle/Field of View	40º
Scan Patterns	Linear
Minimum Print Contrast	Minimum 25%
Min x. Dimension	0.1 mm (4 mils)
Reading Distance	Up to 90cm (35 in)
Symbologies Supported	UPC (E&A), EAN, RSS, Code 39, Code 128, UCC/EAN 128, ISBN, ISBT, Interleaved, Matrix, Industrial and Standard 2 of 5, Codabar, Code 93/93i, Code 11, MSI, Plessey, Telepen, PDF417, Micro PDF417
Interfaces	Decoded mode: RS-232 TTL with Intermec Scanner Control Protocol (ISCP)
Ambient Light	Works in any lighting conditions, from 0 to 100,000 lux

7.6.1.1 EV15 Decode Zones

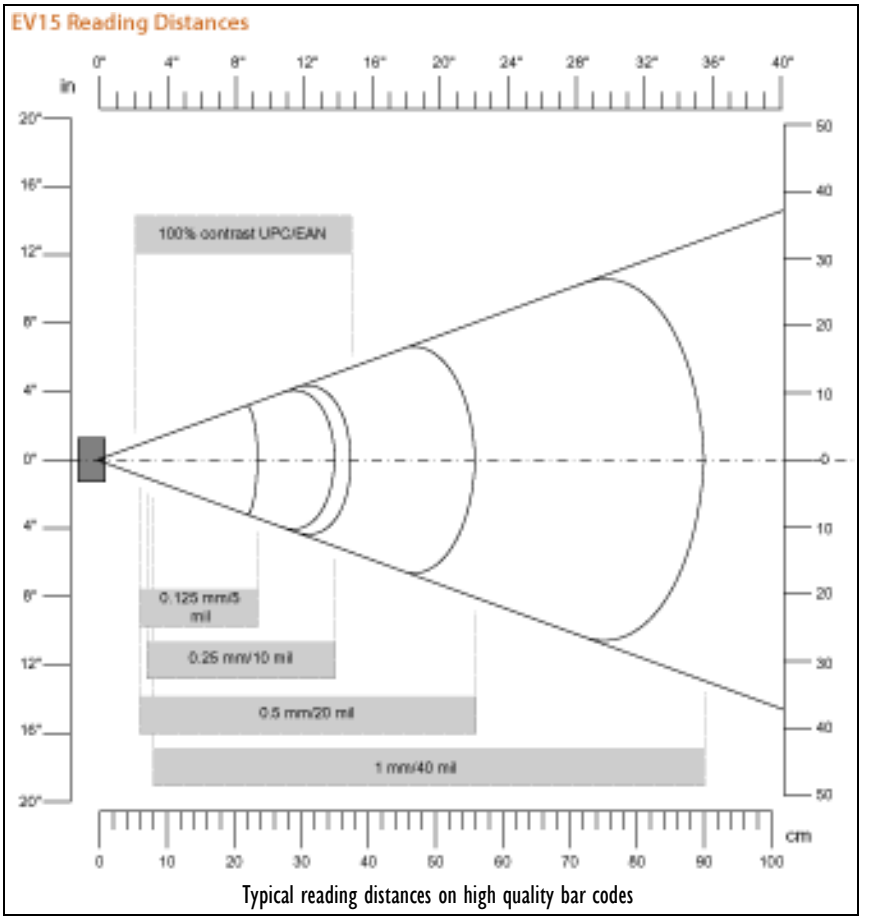


Figure 7.1 EV15 Decode Zones

7.6.2 SE1200 High Performance & Long Range Specifications

Parameter	SE1200HP	SE1200LR
Type	Laser Class 2	Laser Class 2
Light Source	Visible Laser Diode 650 nm	Visible Laser Diode 650 nm
Scan Rate	35 (± 5) scans/sec (bidirectional)	35 (± 5) scans/sec (bidirectional)
Scan Angle/Field of View	42º± 2º	23º± 2º
Scan Patterns	Linear	Linear
Minimum Print Contrast	Minimum 20% absolute dark/light reflectance measured at 650 nm	Minimum 40% absolute dark/light reflectance measured at 650 nm
Symbologies Supported	UPC/EAN, Code 128, Code 39, Code 93, I 2 of 5, Discrete 2 of 5, Codabar, MSI UCC/EAN 128.	UPC/EAN, Code 128, Code 39, Code 93, I 2 of 5, Discrete 2 of 5, Codabar, MSI UCC/EAN 128.
Programmable Parameters	Laser On Time, Aim Duration, Power Mode, Trigger Mode, Bi-directional Redundancy, Symbology types/lengths, Data formatting.	Laser On Time, Aim Duration, Power Mode, Trigger Mode, Bidirectional Redundancy, Symbology types/lengths, Data formatting.
Ambient Light:	Artificial: 450 ft. candles (4844 Lux). Sunlight: 10000 ft. candles (107,640 Lux).	Artificial: 450 ft. candles (4844 Lux). Sunlight: 8000 ft. candles (86,112 Lux).
Laser Output Power (peak)	0.83mW	1.33mW

7.6.3 SE1200 Advanced Long Range & SE2223PDF Specifications

Parameter	SE1200ALR	SE2223PDF
Type	Laser Class 2	Laser Class 2
Light Source	Visible Laser Diode 650 nm	Visible Laser Diode 650 nm
Scan Rate	35 (± 5) scans/sec (bi-directional)	590 scan/sec. 22 frames/sec.
Scan Angle/Field of View	13º± 2º	Horizontal: 34º, Vertical: 12.5º
Scan Patterns	Linear	Linear and Smart Raster
Minimum Print Contrast	Minimum 40% absolute dark/light reflectance measured at 650 nm.	Minimum 40% absolute dark/light reflectance measured at 650 nm. 35% absolute dark/light reflectance differential (PDF). 25% absolute dark/light reflectance differential (1-D).
Symbologies Supported	UPC/EAN, Code 128, UCC/EAN 128, RSS, Code 39, Code 93, I 2 of 5, Discrete 2 of 5, Codabar, MSI.	PDF417, Micro PDF, UPC/EAN, Code 39, Interleaved 2 of 5, Code 128, Codabar, MSI Plessey, RSS and Composite codes.
Programmable Parameters	Laser On Time, Aim Duration, Power Mode, Trigger Mode, Bi-directional Redundancy, Symbology types/lengths, Data formatting.	Laser On Time, Aim Duration, Power Mode, Trigger Mode, Bidirectional Redundancy, Symbology types/lengths, Data formatting, Pattern Controls.
Ambient Light:	Artificial: 450 ft. candles (4844 Lux). Sunlight: 4000 ft. candles (43,056 Lux).	Artificial: 450 ft. candles (4844 Lux). Sunlight: 8000 ft. candles (86112 Lux).
Laser Output Power (peak)	1.35mW	0.86mW

7.6.3.1 SE1200 And SE2223 Decode Zones

Bar Code (mil)	Read Distance					
	High Performance		Long Range		Advanced Long Range	
	Min (inches)	Max (inches)	Min (inches)	Max (inches)	Min (inches)	Max (inches)
5.0	3.0	4.5				
7.5	3.0	8.5				
10.0	2.5	12.5	13.0	17.5		
15.0	2.5	18.5	8.5	33.5	20.0	50.0
20.0	2.5	20.5	9.5	38.5	30.0	60.0
40.0	3.0	29.5	9.5	79.5	30.0	98.0
55.0	3.5	35.5	9.5	89.5	27.0	115.0

Table 7.1 Decode Zones – HP, LR And ALR

Bar Code (mil)	Raster Laser Scanner Read Distance	
PDF Bar Codes	SE2223	
	Min (inches)	Max (inches)
6.5	2.5	6.5
10.0	2.5	9.5
15.0	2.5	15.5

Table 7.2 Decode Zones – PDF Scanner

7.6.4 SE1224HP Specifications

Parameter	SE1224HP
Type	Laser Class 2
Light Source	Visible Laser Diode 650 nm
Scan Rate	35 (± 5) scans/sec (bi-directional)
Scan Angle/Field of View	42º (typical), 30º (narrow)
Scan Patterns	Linear
Minimum Print Contrast	Minimum 25% absolute dark/light reflectance measured at 650 nm.
Symbologies Supported	UPC/EAN, Code 128, UCC/EAN 128, RSS, Code 39, Code 93, I 2 of 5, Discrete 2 of 5, Codabar, MSI.
Programmable Parameters	Laser On Time, Aim Duration, Power Mode, Trigger Mode, Bi-directional Redundancy, Symbology types/lengths, Data formatting.
Ambient Light:	Artificial: 450 ft. candles (4844 Lux). Sunlight: 8000 ft. candles (86112 Lux).
Laser Output Power (peak)	1.35mW

7.6.4.1 SE1224HP Decode Zones

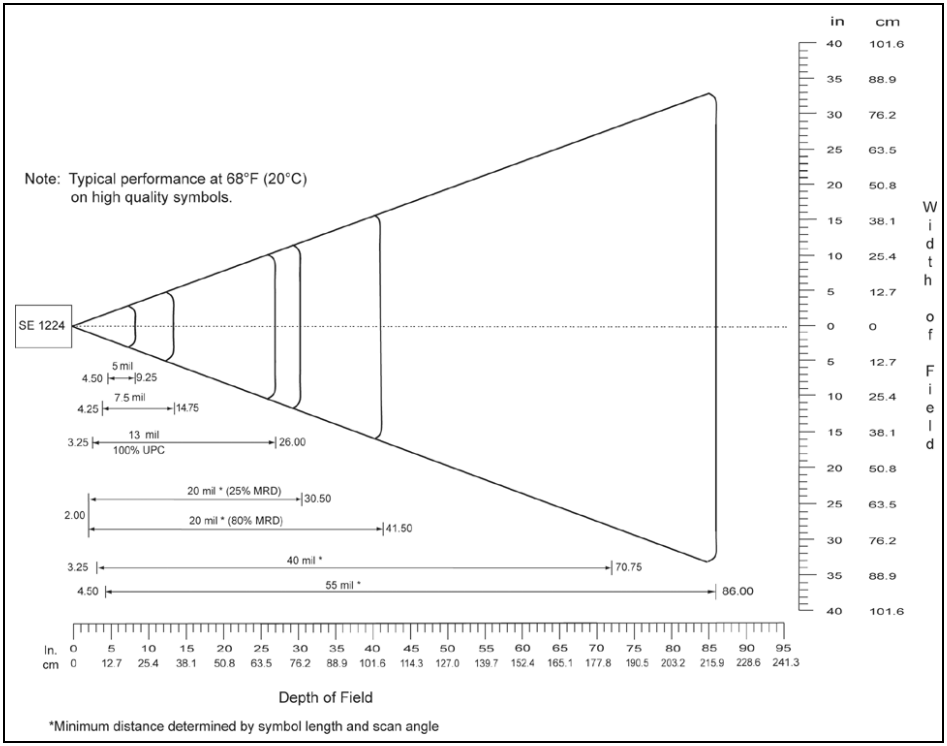


Figure 7.2 SE1224HP Decode Zones

7.6.5 SE1524ER – Extended Range Scanner

Parameter	SE1524ER
Type	Laser Class 2
Light Source	Visible Laser Diode 650 nm
Scan Rate	35 (±5) scans/sec (bi-directional).
Scan Angle/Field of View	13.5° ±0.7°
Scan Patterns	Linear
Minimum Print Contrast	Minimum 25% absolute dark/light reflectance measured at 650 nm.
Symbologies Supported	UPC/EAN, Code 128, UCC.EAN128, RSS, Code 39, Code 93, I 2 of 5, Discrete 2 of 5, Codabar, MSI.
Programmable Parameters	Laser On Time, Aim Duration, Power Mode, Trigger Mode, Bi-directional Redundancy, Symbology types/lengths, Data formatting.
Ambient Light:	Artificial: 450 ft. candles (4,844 Lux). Sunlight: 4,000 ft. candles (86,112 Lux).
Laser Output Power (peak)	1.26mW

7.6.5.1 SE1524ER Decode Zones

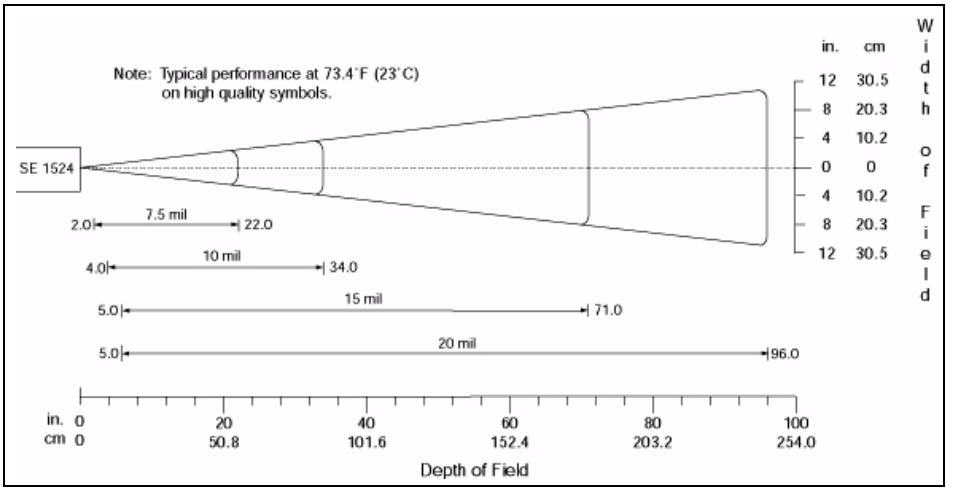


Figure 7.3 SE1524ER Decode Zone A (Short Range, Small Codes)

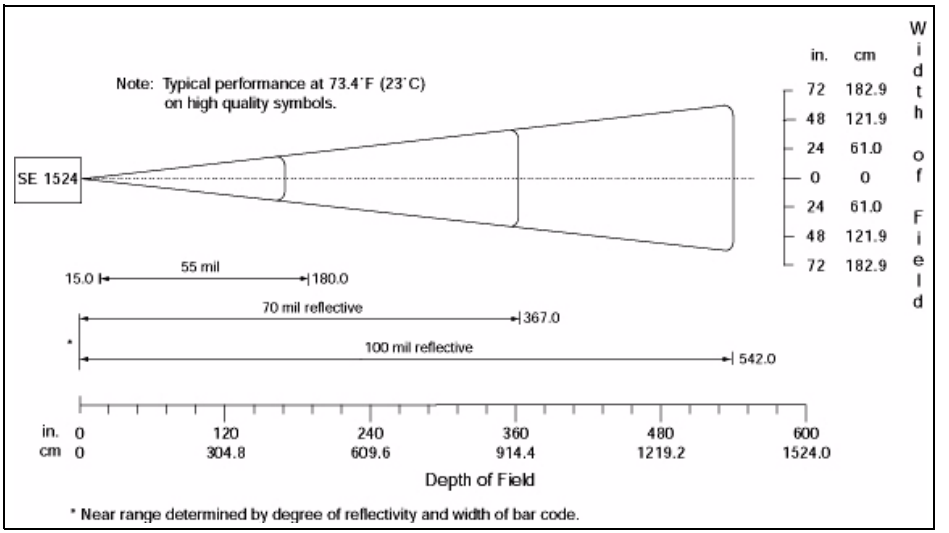


Figure 7.4 SE1524ER Decode Zone B (Long Range, Large Codes)

7.6.6 SX5400 Imager

Parameter	SX5400*
Optical Resolution	752H x 480V
Field of View at 160mm	120mm (H) x 78mm (V) 41.1° (H) x 27.4° (V)
Pitch Angle	±45°
Skew Angle	±45°
Ambient Light	0 to 100,000 lux (full sunlight) 300 lux nominal
Minimum Contrast	10%
Targeting	Intuitive range finding 626 nm LED
Self Illumination	Red LED (standard)
Supply Voltage	5 V ± 10%
Power supply	3.6 Volt DC nominal (2.7 - 5 Volts DC)
Connectivity	USB 1.1 or serial async
Connector to the interface board	Molex 52892-1295 or HiRose FH12-12S-.5SH
Symbologies supported	Code 39; Code 39 Full ASCII; UPC-A, -A2, -A5; UPC-E, -E2, -E5; EAN-8 -13; JAN; I2of5; Code 128; Codabar/NW7; RSS 14, RSS Limited, RSS Expanded, RSS 14 Truncated, PDF417, microPDF417; Composite, CC-A, CC-B, CC-C; image capture, Data Matrix; QR Code; Maxicode; Aztec Code; Planet; Postnet; Royal Mail 4SCC; 4 State postal codes from Australia, Canada, Japan; Korean Post 3of5.

* Formerly known as Symagery SX5400.

7.6.6.1 Near, Far & Depth Of Reading – SX5400*

Symbology	Size (mil)	Near Avg. (Inches)	Far Avg. (Inches)	DOR Avg. (Inches)
C39	7.5	4.0	7.0	3.0
C39	10	2.75	9.25	6.5
C39	15	2.25	11.0	8.75
PDF6.6	6.6	4.0	6.5	2.5
PDF10	10	3.25	9.0	5.75
PDF15	15	2.25	10.75	8.5
DM15	15	3.0	8.0	5.0
QR15	15	3.75	7.5	3.75
UPC	12.5	3.0	9.5	6.5

* Typical performance at 300 lux for the SX5400 @ 160mm focus when using Grade A photographic quality bar codes.

7.7 External Scanner Specifications

7.7.1 PowerScan® LR and XLR Industrial Scanner Specs

Communication

Undecoded	Standard and Intermec-compatible.

Mechanical

Dimensions	6.9 x 11.2 x 18.3 cm (2.7 x 4.4 x 7.2 in)
Weight	Scanner - 280 g (9.9 ozs) Cable (82.3 cm 32 in) - 176 g (6.2 ozs)
Cable lengths	Collapsed: 81 cm (32 in) Max working: 183 cm (72 in)

Electrical

Operating voltage	4 VDC to 14 VDC
Operating current - nominal	Undecoded: 75 mA @ 5 VDC Decoded: 100 mA @ 5 VDC
Idling current - low power mode	50 µA @ 5 VDC

Optical

Light source	Extra bright 650 nm Visible Laser Diode (VLD)
Scan System	Frictionless lifetime flexure mechanism
Rate	35 scans/sec nominal
Depth of field - Long Range	**Paper Labels (decoded)** 7.5 mil 6 to 10 in (15 to 25 cm) 10 mil 5 to 20 in (13 to 51 cm) 15 mil 5 to 32 in (13 to 81 cm) 20 mil 5 to 48 in (15 to 122 cm) 40 mil 8 to 85 in (20 to 216 cm) 55 mil 15 to 108 in (38 to 274 cm) Reflective Labels (decoded) 40 mil 22 to 100 in (56 to 254 cm) 55 mil 30 to 104 in (76 to 366 cm) 70 mil 40 to 180 in (102 to 457 cm) 100 mil45 to 264 in (114 to 671 cm)

Depth of Field-Extra Long Range	**Paper Labels (decoded)** 15 mil 28 to 60 in (71 to 152 cm) 20 mil 28 to 72 in (71 to 182 cm) 40 mil 28 to 144 in (71 to 144 cm) 55 mil 40 to 180 in (102 to 457) **Reflective Labels (decoded)** 40 mil 40 to 180 in (102 to 457 cm) 70 mil 80 to 300 in (2032 to 762 cm) 100 mil80 to 432 in (203 to 1097 cm)
Print Contrast Ratio	25% minimum
Pitch	± 65°
Skew	± 55°
Ambient Light Immunity	Artificial light: 1200 ft. candles. Sunlight: 8000 ft. candles.

Environmental

Temperature Rating	Operating: -22° to 122° F (-30° to 50° C) Storage: -40° to 158° F (-40° to 70° C)
Humidity	5 to 95% NC
Shock (at 23° C)	Withstands multiple 6 foot drops to concrete.
Vibration	Meets MIL-STD-810E
Water and Dust	IEC529 rating IP54DW

Decoding Capabilities

Auto-discriminates between:	UPC A, E/EAN8, 13/JAN8, 13 (P2/P5, Code 128 EAN add-ons) Code 128, MSI/Plessey, Code 39, Interleaved 2 of 5, Code 39 Full Ascii, Standard 2 of 5, Code 93, Codabar,

Safety/Regulatory

Electrical	Complies to: Gost R; TUV; UL; cUL
Emissions	Complies to: FCC-A;EN55022-B BCIQCNS13438; AS/NZS3548; VCCI-B
Laser Classification	IEC 60825-1: 1993+A1: 1997+A2:2001 CDRH 21 CFR 1040 Class II

7.7.2 PowerScan® Standard Range Scanner Specs

Communication

Undecoded	Standard and Intermec-compatible.

Mechanical

Dimensions	6.9 x 11.2 x 18.3 cm (2.7 x 4.4 x 7.2 in)
Weight	Scanner - 280 g (9.9 ozs) Cable (82.3 cm 32 in) - 176 g (6.2 ozs)
Cable lengths	Collapsed: 81 cm (32 in) Max working: 183 cm (72 in)

Optical

Light source	Extra bright 650 nm Visible Laser Diode (VLD)
Scan System	Frictionless lifetime flexure mechanism
Rate	35 scans/sec nominal
Depth of field - Standard	**Paper Labels (decoded)** 7.5 mil 3.0 to 6 in (9 to 15 cm) 10 mil 1.5 to 15 in (4 to 38 cm) 15 mil 1.0 to 25 in (2.5 to 64 cm) 20 mil 1.0 to 35 in (2.5 to 89 cm) 55 mil 6.0 to 60 in (15 to 152 cm) High Density (decoded) 3 mil 1.0 to 2 in (2.5 to 5.1 cm) 4 mil 1.0 to 3 in (2.5 to 8 cm) 5 mil 0.8 to 3.8 in (2 to 10 cm) 7.5 mil 0.6 to 4.5 in (1.5 to 11 cm) 10 mil 0.2 to 5.5 in (0.5 to 14 cm)
Print Contrast Ratio	25% minimum
Pitch	± 65°
Skew	± 55°
Ambient Light Immunity	Artificial light: 1200 ft. candles. Sunlight: 8000 ft. candles.

Electrical

Operating voltage	4 VDC to 14 VDC
Operating current - nominal	Undecoded: 75 mA @ 5 VDC Decoded: 100 mA @ 5 VDC
Idling current - low power mode	50 µA @ 5 VDC

Environmental

Temperature Rating	Operating: -22° to 122° F (-30° to 50° C) Storage: -40° to 158° F (-40° to 70° C)
Humidity	5 to 95% NC
Shock (at 23° C)	Withstands multiple 6 foot drops to concrete.
Vibration	Meets MIL-STD-810E
Water and Dust	IEC529 rating IP54DW

Decoding Capabilities

Auto-discriminates between:	UPC A, E/EAN8, 13/JAN8, 13 (P2/P5, Code 128 EAN add-ons) Code 128, MSI/Plessey, Code 39, Interleaved 2 of 5, Code 39 Full Ascii, Standard 2 of 5, Code 93, Codabar,

Safety/Regulatory

Electrical	Complies to: Gost R; TUV; UL; cUL
Emissions	Complies to: FCC-A;EN55022-B BCIQCNS13438; AS/NZS3548; VCCI-B
Laser Classification	IEC 60825-1: 1993+A1: 1997+A2:2001 CDRH 21 CFR 1040 Class II

7.8 RD7950 Integrated UHF RFID Reader

For detailed RD7950 specifications, please see the *RD7950 UHF RFID Reader Quick Reference Guide (P/N 8000056)*.

7.9 HU3000 - 1900 mAh Lithium-Ion Battery Pack

For detailed safety instructions, please see “Lithium-Ion Battery Safety Precautions” on page xxiv.

Technology	Lithium-Ion (Li-Ion)
Operating Temperature	-20°C to 60°C (-4°F to 140°F)
Charge Temperature	5°C to 39°C (41°F to 102°F)
Storage Temperature	-30°C to 60°C (-22°F to 140°C) (Storage at elevated temperatures is not recommended.)
Charge Cycles	Minimum of 300 charge cycles with no degradation below 70% of nominal capacity
Charge Time	Charge time is typically 2 hours.
Voltage	7.4 V nominal (6V min. to 8.4V max.)
Cell Configuration	2 series connected cells
Capacity	1.9 Ah nominal at 300mA discharge 20°C to 6.0V (minimum)
Supported Chargers	6-Gang Charger Combo Charger Combo Docking Station Quad Docking Station

APPENDIX A

SUPPORT SERVICES AND WORLDWIDE OFFICES

Psion Teklogix provides a complete range of product support services to its customers worldwide. These services include technical support and product repairs.

A.1 Technical Support

For technical support in **North America:**
Call Toll free: +1 800 387 8898 Option 3 *or*
Direct Dial: +1 905 813 9900 Ext. 1999 Option 3

For technical support in **EMEA** (Europe, Middle East and Africa), please contact the local office listed in the website below:
http://www.psionteklogix.com/EMEASupport

For technical support in **Asia**, please contact the local office listed in the website below:
http://www.psionteklogix.com

Technical Support for Mobile Computing Products is provided via email through the Psion Teklogix customer and partner extranets. To reach the website, go to www.psionteklogix.com, and click on the appropriate Teknet link on the home page. Then click on the "Login" button or the "Register" button, depending on whether you have previously registered for Teknet. Once you have logged in, search for the "Support Request Form".

A.2 Product Repairs

For repair service in **North America**:
Call Toll free: +1 800 387 8898 Option 2 *or*
Direct Dial: +1 905 813 9900 Ext. 1999 Option 2

For repair service in **EMEA** (Europe, Middle East and Africa), please contact the local office listed in the website below:
http://www.psionteklogix.com/EMEASupport

For repair service in **Asia**, please contact the local office listed in the website below:
http://www.psionteklogix.com

A.3 Worldwide Offices

COMPANY HEADQUARTERS

Psion Teklogix Inc.
2100 Meadowvale Boulevard
Mississauga, Ontario
Canada L5N 7J9

Tel: +1 905 813 9900
Fax: +1 905 812 6300
Email: salescdn@psion.com

CANADIAN SERVICE CENTRE

Psion Teklogix Inc.
7170 West Credit Ave., Unit #1
Mississauga, Ontario
Canada L5N 7J9

Tel: +1 800 387 8898 Option 2 - or -
Direct: + 1 905 813 9900 Ext. 1999, Option 2
Fax: + 1 905 812 6304
Web: www.psionteklogix.com

NORTH AMERICAN HEADQUARTERS AND U.S. SERVICE CENTRE

Psion Teklogix Corporation
3000 Kustom Drive
Hebron, Kentucky
USA 41048

Tel: +1 859 371 6006
Fax: +1 859 371 6422
Email: salesusa@psion.com

INTERNATIONAL SUBSIDIARIES (see also www.psionteklogix.com)

Psion Teklogix S.A.
La Duranne
135 Rue Rene Descartes
BP 421000
13591 Aix-En-Provence
Cedex 3; France

Tel: +33 4 42 90 88 09
Fax: +33 4 42 90 88 88
E-mail: tekeuro@psion.com

APPENDIX B

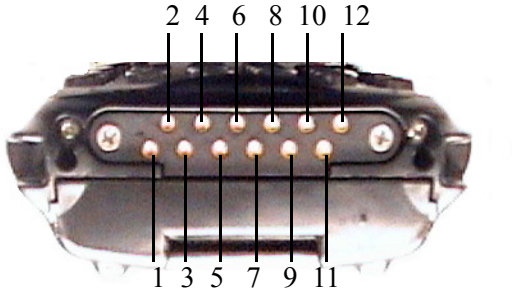
PORT PINOUTS

B.1 Tether Port Pinout 3
B.2 Docking Station Connector 3
B.3 Battery Contacts 4
B.4 JB5 To USB Type B Cable - P/N CA1020 5
B.5 JB5 To RS-232 Serial Cable - P/N CA1010 5

B.1 Tether Port Pinout

The tether port connector incorporates multiplexed undecoded scanner, decoded scanner, RS-232 serial, and USB interfaces. In order for it to operate, a special wiring scheme is needed. If you have a need to create cables for the tether port, contact a Psion Teklogix representative and request document #1010032 "Instruction Tether Port Termination". Attempting to interface to the tether connector without following this document may cause damage to the 7535 G2 or the tethered device.

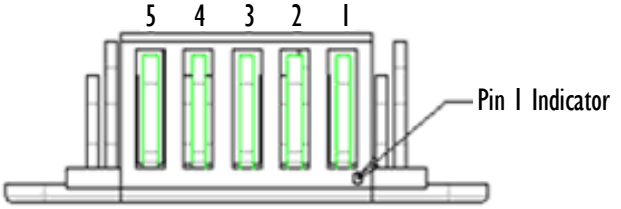
B.2 Docking Station Connector



1. Ext 5V Switched. Used by external peripherals. 5VDC, 1A max.
2. RS-232 Rx Data. Console receive pin.
3. RS-232 Tx Data. Console transmit pin
4. DC Power In (13 - 18VDC @ 3A max). External power adaptor positive input.
5. USB Host Minus. For connecting USB devices.
6. USB Host Plus. For connecting USB devices.
7. DC Power In. Same as pin 4.
8. Docking Station ID. Identifies device attached to the docking station connector. The external device applies a specific resistance between this pin and ground as identification.
9. Ground.
10. USB Device Minus. Connects to another USB host, such as a PC.
11. USB Device Plus. Connects to another USB host, such as a PC.
12. Ground.

B.3 Battery Contacts

These contacts represent right to left numbering with the docking port pointing toward you, and the battery contacts facing upward.

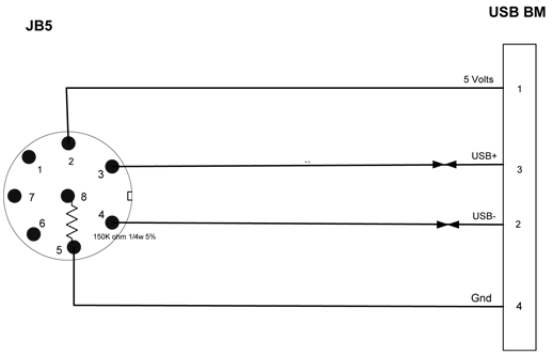


Battery Contacts		
Pin #	Signal	Description
1	POS	Positive Battery
2	CLK	SMBUS Clock
3	BAT_D	Presence/Cell Count
4	DATA	SMBUS Data
5	NEG	Negative Battery

B.4 JB5 To USB Type B Cable - P/N CA1020

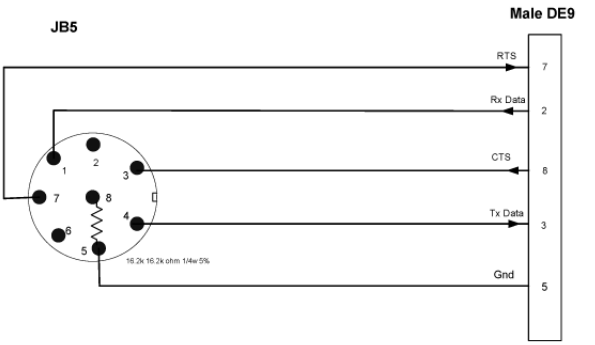
USB CABLE ASSY

(Mates with USB devices that incorporate Type B receptacles)



B.5 JB5 To RS-232 Serial Cable - P/N CA1010

Cable JB5/DE9 Straight Through



APPENDIX C

CONNECTING TO WINDOWS PCS

C.1 Overview 3
C.2 Installing Microsoft ActiveSync 3
C.3 Installing Windows Mobile Device Center 3
C.4 USB Setup Application 4
C.4.1 Launching The Application 5
C.4.2 Installation Complete Dialog Box 7

C.1 Overview

Data transfer options vary slightly depending on the type of operating system installed in your PC. Microsoft® ActiveSync® is personal computer (PC) connectivity software that can be used to connect your 7535 G2 to Windows 2000 or Windows XP PCs running this software. For installation details, please see "Installing Microsoft ActiveSync", below.

If the Windows Vista® operating system is installed in your PC, Windows Mobile® Device Center is required to transfer data between your 7535 G2 and your PC. For installation details, please see "Installing Windows Mobile Device Center" on page C-3.

For any of the operating systems, you'll need to run the USB Setup application to update a Windows PC so that it can connect to a Psion Teklogix 7535 G2 using the USB port on the Portable Docking Module (PDM) connector.

C.2 Installing Microsoft ActiveSync

ActiveSync works only with the Windows® XP SP2 operating system or earlier. To install ActiveSync, follow the step-by-step instructions provided with the program's setup wizard. Refer to the following website for details:

http://www.microsoft.com/windowsmobile/activesync/activesync45.mspx

You'll then need to run the USB Setup application to configure Windows to recognize the 7535 G2. For installation details, please see "USB Setup Application" on page C-4.

C.3 Installing Windows Mobile Device Center

If you have Windows Vista, your 7535 G2 data transfers do not require ActiveSync. This document provides instructions to connect Psion Teklogix devices to computers using the Windows Vista operating system and the procedure to install Psion Teklogix USB Setup drivers on Windows Vista.

Important: ***Before connecting a Psion Teklogix device to a computer running Windows Vista, ensure that you install the necessary operating system and utility updates as well as the correct Psion Teklogix USB device drivers on the computer. Failure to follow these instructions may make it necessary to re-install Windows Vista.***

The following is needed to properly install the Psion Teklogix drivers:

- A PC running the Windows Vista operating system.
- Windows Mobile® Device Center 6.1 or newer, available from Microsoft: http://www.microsoft.com/downloads/details.aspx?FamilyID=46f72df1-e46a-4a5f-a791-09f07aaa1914&DisplayLang=en
- The Psion Teklogix USB setup driver.

In order to successfully install Psion Teklogix USB drivers on the Windows Vista 32 bit operating system, you must complete the following steps **BEFORE** connecting your Psion Teklogix mobile computer to the PC:

1. The PC must already be updated with any critical updates from the Microsoft Windows Update website.
2. Windows Mobile Device Center version 6.1 or later must already be installed on the computer to support key improvements and new features.
3. The Psion Teklogix USB driver setup file must be installed **AFTER** Windows Mobile Device Center has been installed or updated. For installation details, please see "USB Setup Application", below.

At this point the 7535 G2 may now be connected and Windows Vista will correctly recognize the unit. Tap on **Start>Computer** to display the drives—your 7535 G2 will be visible there.

Note: *Windows Mobile Device Center 6.1 provides support for basic connectivity with Windows Embedded CE 5.0 devices—connecting over USB and serial, using desktop pass-through with the computer's internet connection, and file browsing.*

C.4 USB Setup Application

To download the USB Setup application, go to:

www.psionteklogix.com/downloads

This will take you to the Teknet home page.

- Login with your Teknet Username and Password. (If you're not already a member of Teknet, you can register for free at this home page so that you can access the USB Setup application.)

Once you've entered your name and password, the *Download* page is displayed.

- Scroll down to the *Utilities* heading, and then under *USB Setup*, tap on **Download**. If you need further assistance, please contact Psion Teklogix support (1-800-387-8898).

System Requirements

- Windows 2000 or Windows XP for ActiveSync 3.5 or later, or
- Windows Vista.

The install program:

- Updates copies of the device installation scripts *usbstor.inf* and *wceusbsh.inf* with Psion Teklogix-specific information, and
- Sets up a USB connection between the PC and the 7535 G2.

C.4.1 Launching The Application

Before running the USB Setup application:

1. Unplug the 7535 G2 from your PC, and exit all running applications.
2. Double-click on the USB Setup executable you downloaded into the PC.

Welcome Dialog Box

Psion Teklogix USB Setup
PSION TEKLOGIX
Welcome!
This program will attempt to configure your computer so that it may connect to a Psion Teklogix device via USB.
It is highly recommended that you shut down all applications before continuing.
Click "Install" to start or "Cancel" to exit.
Install as a generic device
Build: A186d
Install
Cancel

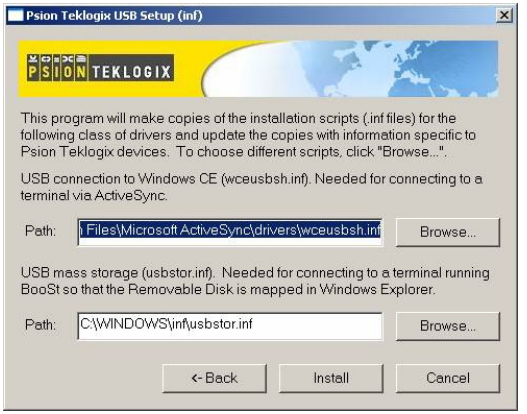
If you check the “Install as a generic device” checkbox, the Hardware Manager on your PC will not prompt you to install every new device you connect to your PC. A generic configuration will be used for the Psion Teklogix devices.

3. Tap on the **Install** button to configure your PC or the **Cancel** button to exit the USB Setup program.

Note: *For ActiveSync users:*

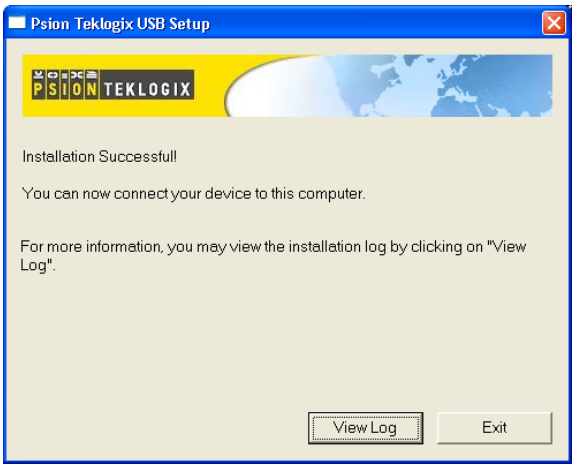
After the USB Setup application is installed, the program checks that ActiveSync is installed and that it is a supported version—3.5 or later. If the version installed on your PC is not supported, you’ll need to exit the USB Setup application, and install a later version of ActiveSync.

In some cases, you may see an additional dialog:


Psion Teklogix USB Setup (inf)
PSION TEKLOGIX
This program will make copies of the installation scripts (.inf files) for the following class of drivers and update the copies with information specific to Psion Teklogix devices. To choose different scripts, click "Browse...".
USB connection to Windows CE (wceusbsh.inf). Needed for connecting to a terminal via ActiveSync.
Path:
l Files\Microsoft ActiveSync\drivers\wceusbsh.inf
Browse...
USB mass storage (usbstor.inf). Needed for connecting to a terminal running BooSt so that the Removable Disk is mapped in Windows Explorer.
Path:
C:\WINDOWS\inf\usbstor.inf
Browse...
<- Back
Install
Cancel

Usually, this dialog is shown when more than one version of ActiveSync is installed. You can either select the correct inf file for the USB Setup program to work with, or you can cancel the installation, and uninstall the extra copies of ActiveSync.

C.4.2 Installation Complete Dialog Box


Psion Teklogix USB Setup
PSION TEKLOGIX
Installation Successful!
You can now connect your device to this computer.
For more information, you may view the installation log by clicking on "View Log".
View Log
Exit

This dialog box indicates the success or failure of the installation.

4. Tap on **Exit** to exit the application.

   If you need to view the log file, tap on **View Log**.

Once the USB Setup program is exited, you can connect the 7535 G2 to your PC using a Portable Docking Module (PDM) (see Section 6.9 on page 250 for more information) and a USB cable, and turn the unit on. If the USB Setup process was successful, the “Found new hardware” wizard may start. If this occurs, choose the recommended defaults. ActiveSync or Windows Vista will detect your 7535 G2.

APPENDIX D

WIRELESS WIDE AREA NETWORK (WWAN)

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D.1 Wireless WAN

A computer equipped with a GSM/GPRS radio provides wide area networking capabilities, and detailed information is provided here for that functionality. However, those radios are not available in the 7535 G2 at this time.

D.1.1 Taskbar Icons

Wireless WAN icons in the taskbar indicate the status of your wide area network connection. Note that these icons are only visible when a GSM/GPRS radio is installed in the computer, and the interface is enabled.

The letter in the signal strength icon (**G** for GSM/GPRS) indicates that a packet data service is available and initialized. Keep in mind that the signal strength icon is displayed without a letter if packet data service is not available or if it is available but not yet initialized.

User interaction is required (e.g. the user is required to enter a PIN).

A non-recoverable (fatal) error has occurred.

The modem status is unknown or the modem is not connected to any network (the signal strength is 0%).

The modem has found a network, and the signal strength is between 1% and 20%.

The modem has found a network, and the signal strength is between 21% and 40%.

The modem has found a network, and the signal strength is between 41% and 60%.

The modem has found a network, and the signal strength is between 61% and 80%.

The modem has found a network, and the signal strength is between 81% and 100%.

A GPRS packet data connection is active, the signal strength is between 41% and 60% and GSM.GPRS packet service is available.

The signal strength icon is replaced by a connection indicator icon when a packet data connection is started.

A GPRS packet data connection is active.

In addition to the signal strength or connection indicator a second icon may be shown:

A new SMS message has arrived.

D.1.2 Establishing A Connection

To display the main *Wireless WAN dialog* box:

- Double-tap on the **Wireless WAN** icon in the taskbar.

If the icon is not visible in the taskbar, the radio interface has been shut down or the modem has been removed:

- In the *Control Panel*, choose the **Wireless WAN** icon.

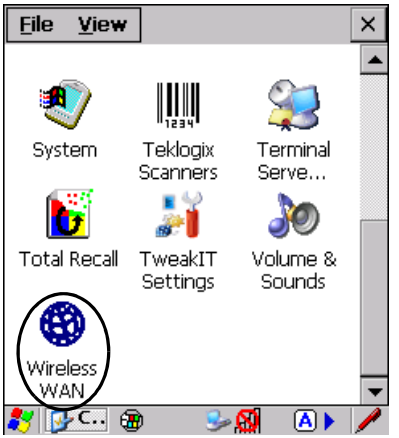

Figure D.1 Wireless WAN Icon

The main *Wireless WAN* dialog box is displayed.

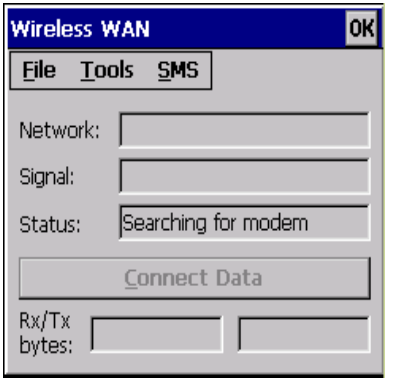

Figure D.2 Establishing A Connection

Note: *If you are prompted to enter a PIN, refer to* "Entering A PIN Number" on page 6 *for details.*

When "Ready to connect" is displayed in the *Status* field, the *Connect Data* button is enabled.

- Tap on the **Connect Data** button.

The progress of the connection is tracked in the *Status* field.

- PPP link to modem active.
- Authenticating user.
- User authenticated.
- Connected.

Note: *Keep in mind that these states may be displayed fairly quickly if the progress of the connection is rapid.*

When the connection state reaches *PPP link to modem active*, the taskbar icon changes to indicate an active connection. The *Connect Data* button changes to *Disconnect*.

D.1.2.1 Disconnecting From A Network

To disconnect from the network:

- Tap the stylus on the **Disconnect** button, and then on **OK**.

When the computer's network connection is severed, the *Status* field displays "Ready to connect".

The signal strength is displayed in the main Wireless WAN screen, even while a connection is active. The *Rx bytes* and *Tx bytes* fields estimate the amount of data transmitted and received, respectively.

D.1.2.2 Shutting Down The Wireless WAN User Interface

While it is not usual to shut down the GSM/GPRS user interface, you can accomplish this by tapping on the **File** menu and choosing the **Exit** command at the bottom of the main *Wireless WAN* dialog box

Note: *Once you've shut down the user interface, you can only enable the radio by opening the Control Panel and tapping on the Wireless WAN icon to display the Wireless WAN dialog box.*

D.1.3 Advanced Information

In most cases, when a GSM/GPRS radio and SIM are installed in your computer, setup is automatic. Follow the steps outlined under the heading "Establishing A Connection" on page 4 to make a connection. The information in this section is for advanced setup purposes.

D.1.3.1 Entering A PIN Number

If a PIN is required, a PIN entry dialog box is displayed.

- Type your PIN, and press [ENTER].

Note: *If you exceed the number of allowable attempts, a PUK entry window is brought to the foreground. You'll need to enter a new PIN number.*

Once the correct PIN or PUK is entered or if none was required, the modem is instructed to perform a GSM network registration followed by a GPRS attach. The main *Wireless WAN* dialog box reflects the progress of the initialization.

- Searching for modem
- Initializing modem
- SIM is ready
- Searching for network
- Registered on network
- Searching for GPRS
- Ready to connect

If the modem loses the connection to the GSM network, the following states are repeated: *Searching for network*, *Registered on networ*k, *Searching for packet data,* and *Ready to connect*.

D.1.3.2 Error States

The following temporary error states (i.e., these states may disappear without interaction) may be displayed:

- Emergency calls only.
  The modem has found a network but is not allowed to register (e.g. no roaming agreement between networks). The modem keeps searching for another network.
- No network found.
  A network is not currently available. The modem continues searching for a network.
- Packet data not available.
  The current network does not support a packet data service.
- Packet data not allowed.
  The modem is not allowed to use the packet data service on the current network (e.g. no GPRS roaming agreement between network; a roaming agreement for voice may still be in place). It is also possible that you do not have a subscription for GPRS at all.

The remaining error states are permanent:

- SIM is missing.
  The SIM card is missing. After the SIM has been inserted a warm boot may be required.
- SIM failure.
  The SIM card is permanently disabled (e.g. because the wrong PUK has been entered too many times). A new SIM is needed.
- Modem failure.
  The modem did not respond to commands as expected. If a warm boot does not clear this condition, the modem may need to be replaced.
- NDIS error.
  An internal software error has occurred. If a warm boot does not clear this condition, Psion Teklogix technical support may need to investigate further.

D.1.4 Tools Menu

The *Tools* menu in the main *Wireless WAN* dialog box offers some additional, advanced setup features.

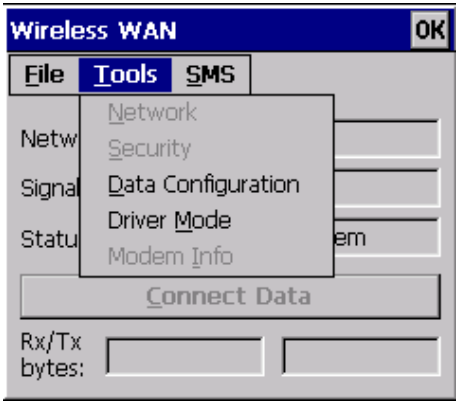

Figure D.3 Tools Menu

D.1.4.1 WWAN Data Configuration

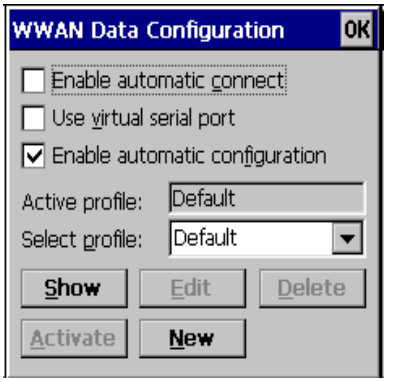

Figure D.4 Data Configuration

Enable Automatic Connect

If the **Enable automatic connect** checkbox is checked (unchecked by default), the Wireless WAN user interface will attempt to establish a GPRS connection whenever GPRS is available (e.g. after resume from suspend without further user interaction).

To activate the automatic connection mode:

- Tap on the **OK** button.

While automatic connection mode is enabled, the *Connect Data* button in the main *Wireless LAN* dialog box changes to *Disable Auto*. To close the currently active connection (if any) and disable the automatic connection mode:

- Tap on **Disable Auto.**

Important: ***Automatic connection mode should not be used if applications other than the Wireless WAN user interface (e.g. Connection Manager) are expected to open and close connections.***

If the automatic connection mode is enabled and another application closes the GPRS connection, the WWAN user interface will immediately try to re-establish the connection.

Use Virtual Serial Port

If *Use virtual serial port* is enabled, packet data connections are established through the virtual serial port of the WWAN driver rather than through the WWAN driver directly. This checkbox should ***only*** be checked if certain third-party VPN (Virtual Private Network) clients are used that do not work correctly otherwise. The default setting is **disabled** (unchecked).

Notes: *The connection setup takes longer through the virtual serial port.*

Enable Automatic Configuration

In most cases, ***the data connection is configured automatically and no user interaction is required.*** This is true even if multiple SIM cards from different operators are used with the same device. The connection parameters are adjusted automatically when a new SIM card is detected (this may require a warm boot). The connection parameters are retrieved from a database.

Manual configuration should be necessary only if:

- One or more parameters in the database are incorrect or a new operator is not yet in the database. (The database should be corrected for subsequent software releases.)
- An operator has assigned individual GPRS user names and passwords.
- A very large site has their own APN. Such connections always have to be configured manually.
- A customer has subscribed for a static IP address. By definition this must be configured manually.

Profiles

In the following section, all the parameters that need to be configured for a connection (such as APN, user name, password, DNS server addresses etc.) are referred to as a profile. Every profile is identified by an arbitrary, unique name. The profile named *Default* is special in that it is always present and can neither be edited nor deleted. (A sample dialog box is presented in Figure D.4 on page 8.) The *Default* profile uses parameters from a built-in database. The home network (the network that issued the SIM) is used for the database look-up. While there can be many configured profiles, only one profile can be active at any time.

If connection profiles are configured manually, the **Enable automatic configuration** checkbox should normally be unchecked.

In one particular use case, manually configured profiles may be combined with automatic configuration. If multiple SIM cards are used with the same device, each SIM card being from a different operator and some or all of them requiring a manually set up profile, automatic configuration may be used to automatically pick the correct manually configured profile for each SIM card. For this to work, each profile must be configured while the corresponding SIM card is inserted in the device and initialized (i.e. the status is at least *SIM is ready*).

The *Select profile:* drop-down list in the data configuration profile selects to which profile a subsequent action applies. A profile named *Default* is always present and contains the current parameters from the database. The following actions are available:

Show

The parameters for the selected profile are displayed when you tap the stylus on this button. For the *Default* profile, the publicly known password is shown—otherwise, the password is hidden.

Edit

The parameters of the selected profile can be edited when you choose the **Edit** button. Keep in mind that you ***cannot*** edit the ***Default*** profile.

Delete

The selected profile is deleted. You ***cannot*** delete the *Default* profile.

Activate

When this button is chosen, the selected profile becomes the active profile. Activation is possible only if the **Enable automatic configuration:** checkbox is unchecked.

New

Tapping on the **New** button allows you to create a new profile.

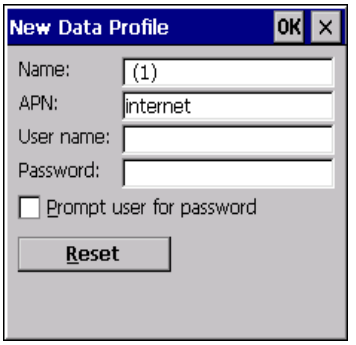

Figure D.5 Creating A New Profile

The name of the newly created profile must be different from all existing profiles. Also, the name cannot be *Default*. When the **New Data Profile** dialog box is opened, a proposal for a unique name is filled in the corresponding entry field. If a manually configured profile has a secret password and unauthorized access to the device is a concern even after the SIM PIN has been entered, the password should not be entered in the *New Data Profile* dialog box and the **Prompt user for password** checkbox should be checked instead. In this case, you will be prompted for the password each time a connection is initiated (the **Connect Data** button in the main *Wireless WAN* dialog box is selected).

Reset

The *Reset* button in the *New Profile* and *Edit Profile* dialog boxes resets all entry fields to the values they had when the dialog box was opened.

Advanced IP

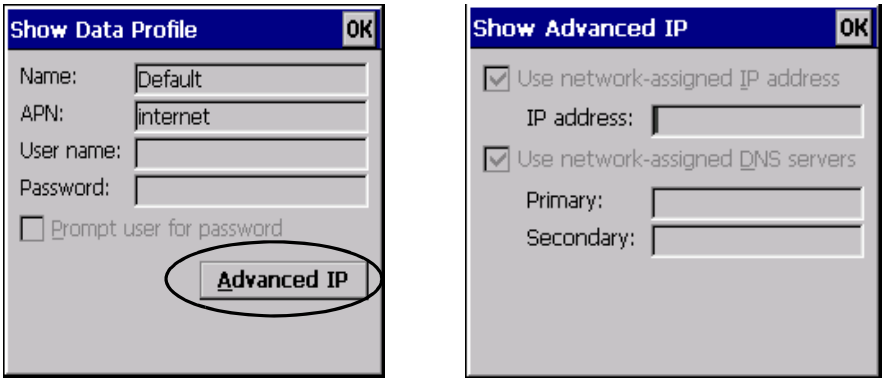

Figure D.6 Assigning IP Information

The **Advanced IP** button in the *Show Profile* and *Edit Profile* dialog boxes opens another dialog box that allows you to configure a static IP address as well as the IP addresses for the primary and secondary DNS server.

D.1.4.1 Security Configuration

The **Security Configuration** dialog box is accessed through the *Tools* menu. The **Security Configuration** dialog box allows you to enable, disable and change the PIN. You will need the current PIN to make any of these changes. The PIN must be enabled in order to be changed. (If the PIN is disabled, the *New PIN* entry field is greyed out.)

Note: *Keep in mind that some network operators do not allow the SIM PIN to be disabled. A new PIN must consist of 4 to 8 numeric digits.*

The *Require PIN on resume* checkbox is independent of the aforementioned settings. By default, this checkbox is unchecked. While this option remains unchecked, any PIN entered on startup or through the *Security Configuration* dialog box and submitted successfully to the modem is stored in memory for as long as the device is not rebooted. This stored PIN is then used without further user interaction whenever the modem requires a PIN (such as resume after suspend or modem removal). The stored PIN is also automatically entered in the *Current PIN* text box whenever the *Security Configuration* dialog box is called up.

If unauthorized access to the device is a concern, the **Require PIN on resume** checkbox should be checked. In this case, the PIN is not stored; whenever a PIN is required, you will be prompted to enter an appropriate value.

D.1.4.2 Network Configuration

In the main Wireless WAN window:

- Tap on the **Tools** menu, and choose **Network**.

By default the GSM radio modem automatically chooses from the available and allowed networks (allowed networks are the home network and all other networks with which the home network has a roaming agreement). You may find there are some situations in which you want to override this default behaviour. For example, you may want to disable roaming if you find yourself in a border area where the home network is not available but a foreign roaming partner is available. Abroad, you may find that an available network does not have GPRS roaming agreements. In this case, you'll need to manually select the network which you know to support GPRS roaming.

Automatic network selection is enabled or disabled by checking or unchecking **Enable automatic network select** in the *Network* dialog box. When automatic network selection is disabled, you must select a network manually.

Available networks can also be viewed without changing any settings. Scanning for available networks is a lengthy operation—a progress bar is shown while the scan is active. For every network that is found, the network name, country, status and numeric network identifier (MCC/MNC, Mobile Country Code followed by the Mobile Network Code) is displayed.

Notes: *Your home network operator will need to let you know which other networks have roaming agreements. Even when a network is listed with an 'Available' status, it does not necessarily follow that it can be used or that the roaming agreement covers GPRS.*

A status of 'Forbidden' indicates that the network cannot be used. If you choose a network that is not covered by a roaming agreement, the status in the main WWAN dialog box changes to 'Emergency calls only', 'No network found', 'GPRS not available' or 'GPRS not allowed'.

D.1.4.3 Driver Mode Configuration

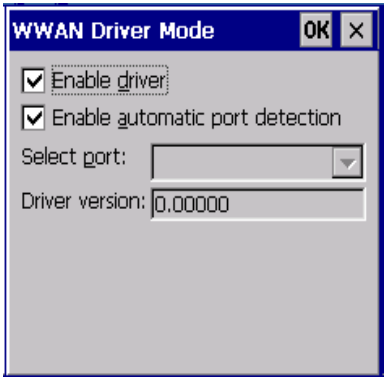

Figure D.7 Driver Mode

By default, the Wireless WAN driver is enabled (the **Enable driver** checkbox is checked). The driver must be disabled in order to use the modem for anything other than GPRS (e.g. dial-up data, fax, or in order to manually submit AT commands to the modem for development, testing, approvals, etc.). If the *Enable driver* checkbox is not checked, the driver is shut down as soon as the **OK** button in the *Driver Mode* dialog box is chosen.

If, on the other hand, the Wireless WAN driver is not running and the **Enable driver** checkbox is checked, the Wireless WAN driver is started as soon the *Driver Mode* dialog box is closed using the **OK** button.

Note: *When the driver is not running, no network status or signal strength can be displayed.*

Since all currently supported GSM modems are automatically detected, the **Enable automatic port detection** checkbox should always be checked. If this checkbox is not checked, a serial port can be selected manually. This experimental feature allows the driver to be used with an internal GSM modem that was not recognized by the automatic detection or an external GSM modem connected to a serial port of the computer through USB or through *Bluetooth*. An external modem connected to a serial port must support 115.2kbit/s, 8bit, no parity and hardware flow control.

D.1.4.1 Modem Information

The fields in this dialog box cannot be edited, they only display information about the computer's modem. If the network operator has not programmed a user's phone number into his SIM, the *Phone:* field remains empty. If the main menu shows an error status, at least partial modem information may be available.

D.1.5 SMS Menu

SMS functions are accessed through the *SMS* menu. For modems that support a SIM card, the SIM initialization typically takes longer than the network initialization, resulting in a noticeable delay before the SMS functions become available.

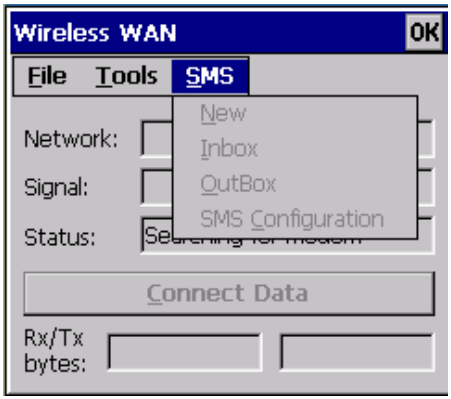

Figure D.8 SMS Menu

New

Tapping on the **New** button opens a dialog for sending a new SMS message. The recipient's phone number (to be entered in the *To:* field) can consist of the digits 0 through 9, as well as the * and # characters, optionally preceded by one + character, indicating an international number (i.e. the country code follows immediately after the + character).

By checking the *Store message in Outbox* field a new message can be stored in the Outbox before being sent. If no storage space is available, or the modem does not support the storage of outgoing messages, then this checkbox is disabled.

Inbox

Tapping on the **Inbox** button opens the list of received messages. Reading 50 messages, for example, from the SIM can take about 30 seconds. By default the list of messages is sorted with the most recently received message first. The list can be sorted by any other column by clicking on the corresponding column heading. Clicking the same column heading twice reverses the sort order. Pressing any letter or digit moves the highlight to the next message whose address begins with that letter or number.

Note: *The date and time formats can be changed through the* Region and Language menu *in Control Panel. For a new date or time format to take effect the* Inbox *has to be closed and re-opened.*

The *Open* button opens the selected message in a new window such that the entire message can be read including the original formatting (line breaks are replaced by spaces in the Inbox message list). Pressing the **Reply** button opens the new message dialog as described above, except the destination phone number is filled in already.

Outbox

Tapping on the **Outbox** button opens the list of sent messages. Otherwise the *Outbox* behaves exactly as the *Inbox* described above. The date and time when a message was sent is not available for GSM modems.

SMS Configuration

Tapping on the **SMS Configuration** button opens the SMS configuration dialog. The SMS Centre address follows the same rules as the recipient's phone number in the *New* message dialog. The message validity period parameter is sent to the SMS Centre with each message sent subsequently and instructs the SMS Centre on how long it should attempt to deliver the message to the recipient (the SMS Centre may impose an upper limit on the validity period regardless of the setting).

Note: *Only certain discrete validity period values can be sent and thus the validity period is rounded to the nearest allowed value. The next time the SMS configuration dialog is opened the rounded value is shown.*

The user interface tries to keep the SMS storage location available for a new incoming message if the *Delete oldest message when full* checkbox is checked. In this case, when a new message arrives and the SMS storage becomes full, the oldest received message is deleted. If any string is entered as the *Message Suppression Prefix,* then messages beginning with that string will not be shown in either the

Inbox or *Outbox*. In this way messages intended for another application running on the same device can be hidden from the user, as long as those messages begin with the string configured here.

D.2 Power Mode

The power mode of the modem is controlled through the *Power* menu in the Control Panel (not through the Wireless WAN user interface).

For CF Card modems, the settings are found under the *Devices* tab. If the checkbox for a modem is unchecked then no power is applied to the modem and no driver is loaded (neither the serial port driver nor the Wireless WAN driver). If the checkbox is checked then power is applied to the modem and the drivers are loaded when the computer is turned on. Power is removed from the modem when the computer enters suspend mode.

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